GE Interlogix

Kalatel DVMRe StoreSafe

Digital Video Multiplexer Recorder

User Manual

WARNING!

To prevent fire and electric shock, do not expose this product to rain or moisture.

The lightning flash with the arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the products enclosure that maybe of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

CAUTION!

To prevent electric shock, do not remove cover. No user serviceable components inside. Refer servicing to qualified service personnel.

CAUTION! Lithium Battery

Danger of explosion if battery is incorrectly replaced. Replace only with the same or equivalent type recommended by the manufacturer.

ATTENTION

This product contains a recyclable lithium battery. It may be illegal to dispose of this battery improperly under local, state, or federal laws. Check with your local waste management officials for disposal and recycling options.

CAUTION!

Electrostatic-Sensitive Device!

Use proper CMOS and MOSFET handing precautions, including approved grounded wrists straps, etc., to avoid damage to this unit or its internal components, from electric discharge.

WARNING!

This equipment generates, uses and can radiate radio frequency energy, and if not installed and used in accordance with the instructions in this manual, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to subpart J of part 15 of FCC rules which are designed to provide reasonable protection against such interference when operated in a commercial environment. This equipment has also been tested and found to comply with the requirements for a CE Class A device and TUV safety standards.

Operation of this equipment in a residential area may cause interference, in which case the user is required to take all measures that are necessary, at the user's expense, to correct the interference.

IMPORTANT INFORMATION

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1 StoreSafe Overview

1.1 Products Featured In This Manual

StoreSafe

StoreSafe Advanced

1.2 Product Description

StoreSafe is a video multiplexer capable of recording from multiple cameras to an internal hard drive while simultaneously providing playback. Unlike outdated time-lapse VCRs, StoreSafe records high-resolution pictures. Digital recording improves playback quality over VCRs, and eliminates the hassle of cleaning heads, changing tapes or servicing motors. Depending on the setup, StoreSafe can store from a few hours to more than 3 years of color images.

Programmable search features eliminate time consuming fast-forwarding or rewinding of tapes, while searching for critical data. Search for recorded images or events by alarm, time, date, video loss, or camera number.

StoreSafe also features convenient front panel buttons for one-touch printing and archiving (CD writing).

Caution! This products primary purpose is to furnish video multiplexing and recording. Although the unit has alarm handling and motion detection functions, they are considered secondary features. **This unit should not be the only alarm device on site.**

Features

- Multiplexer functionality with built-in digital recording.
- Triplex simultaneous recording, playback, and live multiscreen viewing.
- 30pps (pictures per second) recording of up to 16 cameras.
- Remote Programming and control through the RS232 and ethernet ports.
- View live or recorded images remotely using WaveReader software.
- Dual monitor displays.
- Auto-detect video mode on startup (NTSC or PAL).
- Video motion detection (intrusion and activity).
- Displays include full screen, sequenced, picture-in-picture, and multiscreens.
- Alarm Handling with History Log.
- Archive onto CD-Rs with built in CD Writer.
- Continuous Recording with simultaneous Archiving.
- Preview search results with thumbnail images.
- Clock synchronization with Network Server.
- One-touch Print Image button.
- Dynamic IP addressing (DHCP).
- Covert camera recording (recording without display).
- Auto-Daylight savings time change function.
- Alarm Notification via email.
- Integrated WaveBrowser Software.

1.3 Passwords

Passwords are provided to limit access to menus and certain functions. Two levels of password security are provided:

- **Operator:** Limited menu access, only the Operator menu is available.
- **Installer:** Complete menu access, both the Main and Operator menus are available.

As a security measure, it is recommended that the Operator and Installer passwords be changed after installation is complete (see section 3.19). Store the passwords in the administrator's secure files.

Default Passwords

Four-Channel Units

Password Type	Access Level	Function	Changeable by user?	Default Password
Operator	Operator	Provides access to the Operator and SystemView menus.	Yes	**Press 'ENTER' 4 Times**
Installer	Installer	Provides access to all on-screen menus.	Yes	**3 4 4 4**
Factory Defaults	Installer	Resets the multiplexer to the factory defaults.	No	**4 1 1 1**
Language	Installer	Provides access to the On-screen Language menu.	No	**1 4 1 4**
Ethernet Access Reset	Installer	Deactivates the ethernet password, so that the unit may be accessed by any PC equipped with WaveReader.	No	**1 1 1 1**

Ten and Sixteen-Channel Units

Password Type	Access Level	Function	Changeable by user?	Default Password
Operator	Operator	Provides access to the Operator and SystemView menus.	Yes	**Press 'ENTER' 4 Times**
Installer	Installer	Provides access to all on-screen menus.	Yes	**3 4 7 7**
Factory Defaults	Installer	Resets the multiplexer to the factory defaults.	No	**8 1 1 1**
Language	Installer	Provides access to the On-screen Language menu.	No	**5 4 1 5**
Ethernet Access Reset	Installer	Deactivates the ethernet password, so that the unit may be accessed by any PC equipped with WaveReader.	No	**1 1 1 1**

1.4 Unpacking

Check the package and contents for visible damage. If any components are damaged or missing, do not attempt to use the unit, contact the supplier immediately. If the unit must be returned, it must be shipped in the original packing box.

Package Contents

- The StoreSafe unit.
- The Alarm Interface Circuit Board (P/N 0090-0077).
- Accessory PCB (P/N 0900-0127). Advanced models only.
- The User Manual (P/N 0150-0229).
- A WaveReader Software CD (P/N 0151-0005-27W21 or later).
- The WaveReader Software Manual (P/N 0150-0143).
- WaveWatch User Manual (P/N 0150-0189).
- Power Supply (P/N 4310-0020).
- Power Cords (**110 VAC** P/N 4310-0002) and (**220 VAC** P/N 4310-0001).

1.5 Installation Environment

Power: Ensure that the installation site's AC power is stable and within the rated voltage of the 12 Volt DC power supply. If the site's AC power is likely to have spikes or power dips, use power line conditioning or an Uninterruptable Power Supply (UPS).

Ventilation: Ensure that the location planned for the installation of the unit is well ventilated. Take note of the locations of the cooling vents in the unit's enclosure, and ensure that they are not obstructed.

Temperature: Consider the unit's operating temperature (0 to 40 °C) and non-condensing humidity specifications (10% to 80%) before choosing an installation location. Extremes of heat or cold beyond the specified operating temperature limits may cause the unit to fail. Do not install the unit on top of other hot equipment. Leave space between rack mounted units.

Moisture: Do not expose the unit to rain or moisture. Moisture can damage the internal components. Do not install the unit near sources of water.

Chassis: Other equipment may be placed on top of the unit if it weighs less than 35 pounds (16 kilograms).

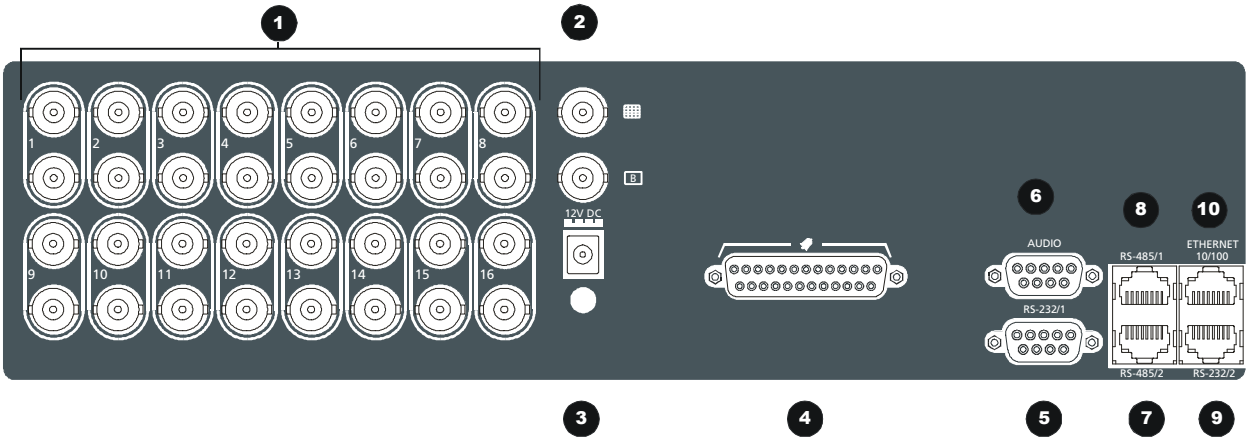
1.6 Associated Equipment

Associated equipment in a typical security system could contain the following items:

- Two monitors
- Printer with Printer Server connected via ethernet cable.
- Video cameras: Composite video, 1 volt peak-to-peak.
- Alarm input devices: Pressure sensors, motion detectors, etc.
- Alarm output devices: Buzzers, Sirens, Flashing Lights, etc.
- A PC connected via ethernet cable.

For instructions regarding the connection of the associated security equipment in your system, please consult the instruction manual of the associated equipment.

1.7 The Back Panel



1. **Camera Inputs:** BNC connector, looping. Auto Terminating.
2. **Composite Monitor-A and -B Output:** Composite video output with BNC style connector.
3. **Power Input:** For connecting the power supply.
4. **Alarm I/O:** For connecting alarm inputs, and alarm output relays.
5. **RS232 Port 1:** For modem connection and external control of the unit.
6. **Aux Port:** For connecting the Accessory PCB for Audio inputs and outputs. Advanced models only.
7. **RS485 Port 2 Connector:** For connecting to keyboard and other RS485 devices. Not used on standard model.
8. **RS485 Port 1 Connector:** For connecting to keyboard and other RS485 devices. Not used on standard model.
9. **RS232 Port 2:** For Event Generation and ASCII Text insertion. Not used on standard model.
10. **10/100 Ethernet Port:** For connecting to remote PC via ethernet network.

Camera Inputs

There are two BNC jacks for each camera. Either jack can receive a camera signal. The signal is looped (directly connected to the other jack), making the camera signal available to other equipment.

The camera input connectors are Auto Terminating.

Cable: 75-Ohm Coaxial

Connectors: BNC

Auto Terminating: Yes

Passive Looping: Yes

This means that the input signal will automatically be terminated with 75-Ohms unless a 2nd cable is connected to the 2nd BNC connector of the same camera input. Make sure there is 75-Ohm termination at the end of the video line if the signal is looped through StoreSafe.

Time base correction is performed during digital capture. As a result, cameras do not require synchronization.

See section 3.13 for information about disabling unused camera jacks in the menu system.

Composite Monitor Output

When connecting directly from StoreSafe to the monitor, select the 75-Ohm impedance setting on the monitor.

Cable: 75-Ohm Coaxial

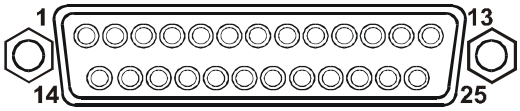
Connectors: BNC

If an additional device is connected to the monitor's looping output, set the termination of the additional device as 75-Ohm, and set the termination of the monitor as Hi-Z (High Impedance).

Alarm I/O Port

The back panel of the unit is equipped with an Alarm Port (DB-25 style connector).

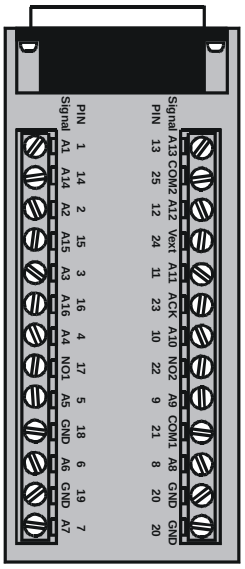
Do not attempt to wire directly to the DB-25 connector on the back panel.



DB-25 Connector on back panel

Connect the Alarm PCB (supplied with the unit) to the Alarm Port. Wire all alarm inputs to the Alarm PCB per the pin out specifications shown below.

Pin 1: Alarm Input 1.
Pin 2: Alarm Input 2.
Pin 3: Alarm Input 3.
Pin 4: Alarm Input 4.
Pin 5: Alarm Input 5.
Pin 6: Alarm Input 6.
Pin 7: Alarm Input 7.
Pin 8: Alarm Input 8.
Pin 9: Alarm Input 9.
Pin 10: Alarm Input 10.
Pin 11: Alarm Input 11.
Pin 12: Alarm Input 12.
Pin 13: Alarm Input 13.
Pin 14 Alarm Input 14.
Pin 15: Alarm Input 15.
Pin 16: Alarm Input 16.
Pin 17: Alarm Output Relay #1.
Pin 18: Ground.
Pin 19: Ground.
Pin 20: Ground.
Pin 21: Alarm Output Relay #1 Common.
Pin 22: Alarm Output Relay #2.
Pin 23: External Alarm Silence and Acknowledge Input.
Pin 25: Alarm Output Relay #2 Common.



Alarm PCB

Active alarm inputs vary by StoreSafe model. 4 channel units have 4 active alarm inputs, 10 channel units have 10 active alarm inputs and 16 channel units have 16 active alarm inputs.

Alarm Input

An alarm condition can be activated by devices such as pressure pads, passive infrared detectors, door switches, or other similar devices.

Alarm Relay Output

The alarm relay output is activated when an alarm condition exists. The alarm output is only active for the duration of the alarm.

Alarm relays can be programmed in the menu system to respond to macros, and video loss. See section 3.10 for information about configuring the alarms in the menu system.

Output: Normally Open Zero potential relay contact.

Voltage: 30V (Max)

Current: 500mA (Max)

External Alarm Acknowledge Input

Connect a switch or similar device to ground this pin in order to acknowledge an alarm condition, and silence associated buzzers and relays. Connect from pin 23 to either pin 18, 19, or 20 (ground pins).

External Device: Normally Open Zero potential relay contact.

All specifications subject to change without notice. GE-Interlogix believes all specifications to be correct at time of printing, but no liability is assumed for omissions or errors.

RS485 Connector (StoreSafe Advanced Models Only)

Shields are grounded at one end, preferably at the StoreSafe end.

See section 3.16 for information about configuring the RS485 network address settings in the menu system.

Wire Type: #24 AWG, twisted pair with shield (2-wire)

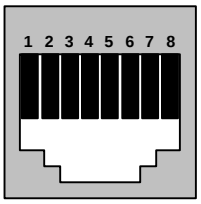
Connector Type: RJ-45

Max. Cable Length: 3200 feet / 1000 meters

RJ-45 Pin Configuration For RS485 Port

Pin	Use
1	Ground (Shield)
2	Not Connected
3	Network +VE
4	Not Connected

Pin	Use
5	Not Connected
6	Network -VE
7	Ground (Shield)
8	Not Connected



RJ-45 socket on back panel.

Ethernet Port

The cable connection configuration depends on your network configuration:

- For a StoreSafe that connects directly to a Hub or Switch, use a straight through connection.
- For a StoreSafe that connects directly to a PC, use a cross over connection.

Consult with your MIS personnel for the specific type of configuration. See section 3.16 for information about configuring the ethernet settings in the menu system.

Wire Type: Cat 5

Connector Type: RJ-45

Max. Cable Length: 100 meters / 328 ft.

Min. Cable Length: 6 feet / 1.8 meters

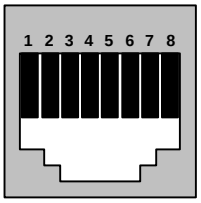
Hub Wiring Configuration: Straight Through

PC Wiring Configuration: Cross Over

RJ-45 Pin Configuration For Ethernet Port

Pin	Use
1	TX+
2	TX-
3	RX+
4	Not Connected

Pin	Use
5	Not Connected
6	RX-
7	Not Connected
8	Not Connected



RJ-45 socket on back panel.

RS232 Port 1

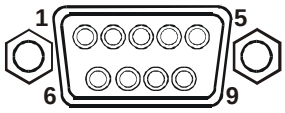
For a Modem connection or remote control of unit. See section 3.16 for information about configuring the modem settings in the menu system. See section 9 for RS232 Remote Control Protocols.

DB-9 Pin Configuration For Port 1

Pin	Use
1	DCD
2	RX
3	TX

Pin	Use
4	DTR
5	Ground
6	Not Connected

Pin	Use
7	RTS
8	CTS
9	Not Connected



DB-9 on back panel.

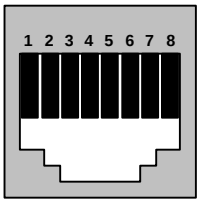
RS232 Port 2 (StoreSafe Advanced Models Only)

For Event Generation and ASCII Text Insertion.

RJ-45 Pin Configuration For RS232 Port 2

Pin	Use
1	Ground
2	Reserved
3	Not Connected
4	RXD

Pin	Use
5	TXD
6	Not Connected
7	Ground
8	Reserved



RJ-45 socket on back panel.

1.8 Power-Up

It is important that the power-up procedures be followed carefully. The unit uses its auto-detect feature to detect camera signals during power-up, and configure itself automatically.

Power-up procedure

Once the system installation is complete, apply power in the following order:

1. Energize the monitors and all of the cameras.
2. Energize StoreSafe.

Power Supply Input
Voltage: 12 Volt DC
Power: 60 Watt (5 Amp)
Connector: 2.1mm barrel, center positive

Once power is applied to the unit, it will begin its power-up procedure. The unit will begin by displaying the software version on Monitor-A, and then the unit will be ready for operation.

Check Video Input Quality

Check the picture quality by selecting each camera for full screen display. If the picture quality is poor, check the following items:

- The BNC connections.
- The loop-through terminations.
- The video levels of incoming signals.
- The possibility of ground loops.
- Consult the camera's installation instructions for additional information about proper camera setup.

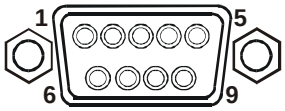
Check Record And Playback Quality

Record for at least three minutes at the default record rate. Then play back the recording, selecting each camera for full screen display. Check the playback picture quality.

AUX Port

The back panel of the advanced model unit is equipped with an Aux Port (DB-9 style connector).

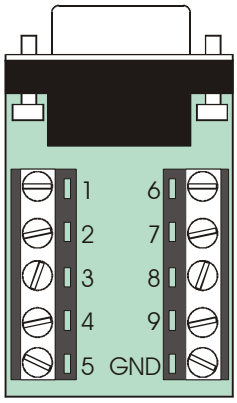
Do not attempt to wire directly to the DB-9 connector on the back panel.



DB-9 Connector on Back Panel

Connect the Accessory PCB (supplied with the advanced models) to the AUX port to access the Audio features. Wire the audio input and output to the Accessory PCB per the pin out specifications shown below.

Pin 1: Not Used.
Pin 2: Audio Out.
Pin 3: Ground.
Pin 4: Audio In.
Pin 5: Ground.
Pin 6: Not Used.
Pin 7: Ground.
Pin 8: Not Used.
Pin 9: Ground.
GND: Ground.



Accessory PCB

2 StoreSafe Basic Operations

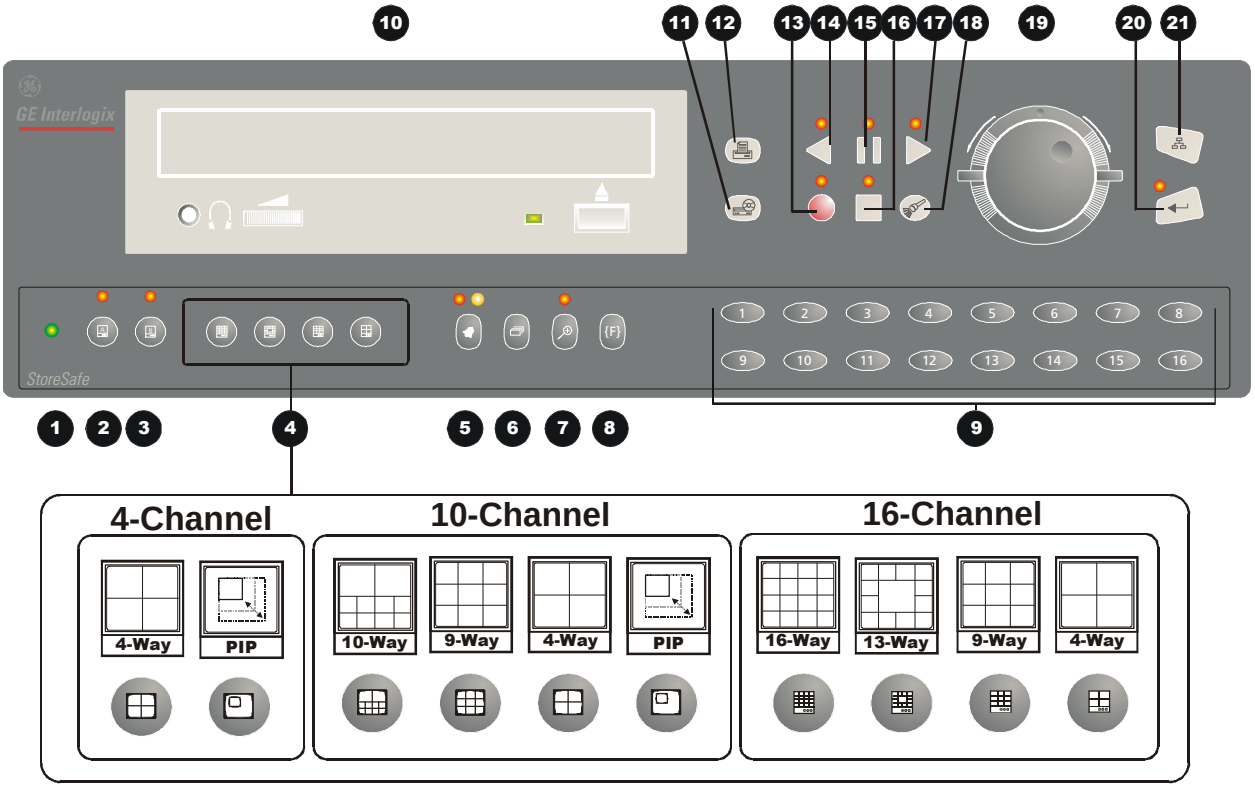
2.1 Principal Operating Modes

StoreSafe has five principal modes of operation:

- Live Viewing.
- Playback.
- Recording.
- Printing.
- Archiving to CD.

Each mode is discussed in detail later in this section.

2.2 The Front Panel



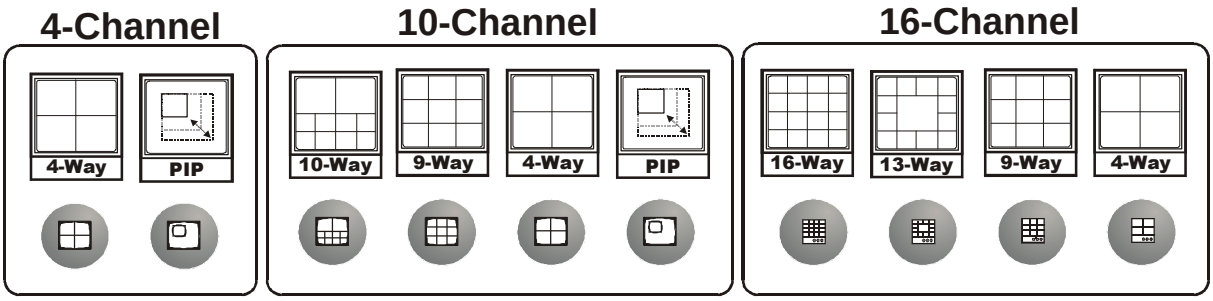
1. **Power Indicator:** Indicates power on/off condition.
2. **Monitor Selection Button:** Monitor A.
3. **Monitor Selection Button:** Monitor B.
4. **Multiscreen Selection Buttons:** Various Multiscreen buttons depending on the StoreSafe model.
5. **Alarm Button:** Allows user to acknowledge and silence alarms.
6. **Sequence Button:** Sequences camera views.
7. **Zoom Button:** Provides a 2X digital zoom.
8. **Function Button:** Used in conjunction with Camera Buttons to run Macros.
9. **Camera Selection Number Buttons:** Camera numbers 1 through 16.

10. **CD Recorder:** For recording data to CD.
11. **Record CD Button:** One-touch archiving of selected video onto CD using the built-in CD-Writer.
12. **Print Image Button:** One-touch printing of displayed image.
13. **Record Button:** Used to Start and Stop Recording.
14. **Reverse Play Button:** Playback in Reverse.
15. **Freeze Button (Pause):** Freezes camera images on-screen in Live mode. Pauses Playback.
16. **Stop Button:** To stop Playback and return to Live mode.
17. **Play Forward Button:** Begins Playback.
18. **Search Button:** Access to stored video data.
19. **Jog/Shuttle:** Controls Playback speed and Menu selections.
20. **Menu Button:** Provides access to on-screen menus.
21. **Enter Button:** Confirms selection in menus.

2.3 Live Viewing

Multiscreen Display

In Live Multiscreen mode, press one of the **Multiscreen** buttons to activate the multiscreen display on Monitor-A. Pressing the multiscreen button with the maximum multiscreens (i.e. 16-way or 10-way) repeatedly will cycle through all the available multiscreens. Multiscreen displays are not available on Monitor-B. Live Multiscreens are displayed with gray borders. For detailed information about Multiscreen displays, see section 2.6.



Multiscreen Display With Sequencing

If a multiscreen display does not include all of the cameras, the remaining cameras can be sequenced in the bottom right cameo. While in a multiscreen display, press the **Sequence** button to begin sequencing. For detailed information about sequencing, see section 2.8.

Sequence Button

Full Screen Display

Select any camera for Full Screen display by pressing the **Number** button of the desired camera. Pressing the Camera number button again displays the Status Display Box. Pressing the same button a third time displays any associated ATM or cash register ASCII text, see section 2.9.

Number Button

Sequenced Full Screen Display

While in a Full Screen display, press the **Sequence** button to begin full screen sequencing. The sequence list is programmable. For detailed information about programming the sequence list see section 2.8.

Sequence Button

Zooming

To activate the 2x digital zoom, select the full screen display of the camera you wish to zoom, then press the **Zoom** button. Zooming will be indicated by the LED located directly above the **Zoom** button. Zooming is also indicated as **ZOOM** on the primary monitor. Zooming works with frozen and non-frozen images. Zoomed images can also be frozen.

Zoom Button with LED

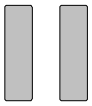
While Zoomed, rotate the **Jog/Shuttle** to Pan and Tilt across the image. Please note, the camera does not move during digital Pan/Tilt.

Press the **Zoom** button again to cancel the Zoom operations.

If the **Zoom** button is pressed while in a multiscreen display, the camera from the last active cameo is selected for full screen display. Press the **Zoom** button again to activate the Zoom operation.

Freezing

Pressing the **Freeze** button freezes all camera images on-screen. Full Screen freezing is indicated as **FRZ** on-screen. Multiscreen freezing is indicated as * (a flashing asterisk) in each frozen cameo.



Freeze Button

Individual cameos can be frozen in Active Cameo mode (see section 2.7).

Press the **Freeze** button again or any camera button to cancel Freeze operations.

Selecting Monitor-B

To control Monitor-B, press the **Monitor B** selection button. The Monitor-B LED will light to indicate that the number keypad now controls Monitor-B. Press the **Monitor A** button to return the keypad control to Monitor-A.

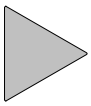
Monitor A, B Buttons

2.4 Playback

Playback always displays on Monitor A. Playback multiscreen borders are black, as opposed to the gray borders of the live multiscreens. Monitor B continues to display live full screen images in playback mode. To begin playback, press the **Play Forward** or **Reverse Play** button.

Play Forward

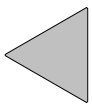
When the Play Forward button is pressed, the unit will play forward at the rate the data was recorded. While in Playback mode, the user may change the playback direction, playback speed, etc. To return to Play Forward operations, press the **Play Forward** button.



Play Forward Button

Reverse Play

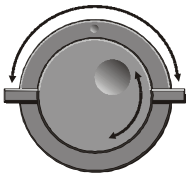
To begin reverse playback, press the **Reverse Play** button.



Reverse Play Button

Fast Forward

During playback, rotate the **Shuttle** (the outer dial) clockwise to view data at a higher than normal rate. Increasing the amount of rotation increases the rate of playback.



Jog / Shuttle

AutoPause

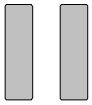
During playback, moving the **Jog** (the inner dial) in any direction will freeze playback. Depress the **Freeze** or any play button to continue playback.

Rewind

During playback, rotate the **Shuttle** counter-clockwise to view data (in reverse) at a higher than normal rate. Increasing the amount of rotation increases the rate of playback.

Freeze

During playback, press the **Freeze** button. This feature pauses all full screen and multiscreen images



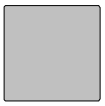
Freeze Button

Single Frame Advance & Single Frame Rewind

During Freeze or Pause mode, rotate the **Jog** (the inner dial) to view the frame directly before or after the frame displayed on-screen.

Stop Playback

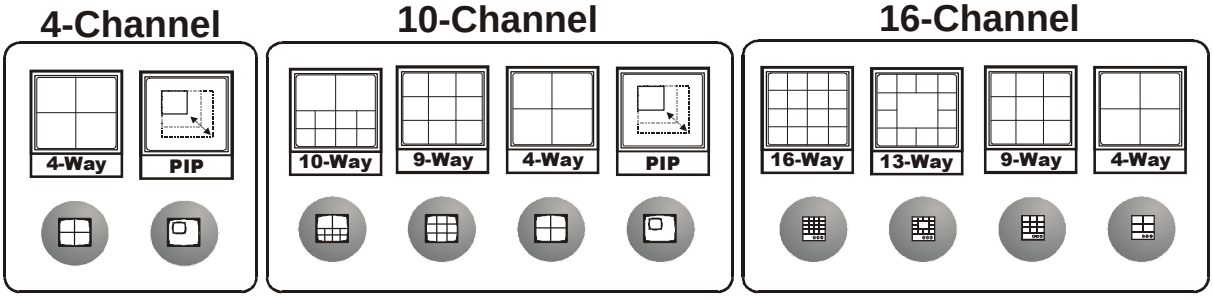
To stop playback and return to Live Multiscreen mode on Monitor A, press the **Stop** button.



Stop Button

Multiscreen Display

During Playback, press one of the **Multiscreen** buttons to activate a multiscreen display. Pressing the multiscreen button with the maximum multiscreens (i.e. 16-way or 10-way) repeatedly will cycle through all the available multiscreens. The 6-way and PIP multiscreen displays are not available in Playback mode. For detailed information about Multiscreen displays, see section 2.6.



Multiscreen Display With Sequencing

If a multiscreen display does not include all of the cameras, the remaining cameras can be sequenced in the bottom right cameo. While in a multiscreen display, press the **Sequence** button to begin sequencing. For detailed information about sequencing, see section 2.8. This feature is not available on the 4-channel units.

Full Screen Display

Select any camera for Full Screen display by pressing the **Number** button of the desired camera. Pressing the Camera number button again displays the Status Display Box. Pressing the same button a third time displays any associated ATM or cash register ASCII text.

Number Button

Sequenced Full Screen Display

While in a Full Screen display, press the **Sequence** button to begin full screen sequencing. The sequence list is programmable. For detailed information about programming the sequence list see section 2.8.

Sequence Button

Zooming

To activate the 2x digital zoom, select the full screen display of the camera you wish to zoom, then press the **Zoom** button. Zooming will be indicated by the LED located directly above the **Zoom** button. Zooming is also indicated as **ZOOM** on the monitor. Zooming works with frozen and non-frozen images. Zoomed images can also be frozen.

While Zoomed, use the **Jog/Shuttle** to Pan and Tilt across the image. Please note, the camera does not move during digital Pan/Tilt.

Press the **Zoom** button again, or another camera button to cancel the Zoom operations.

Zoom Button with LED

If the **Zoom** button is pressed while in a multiscreen display, the camera from the last active cameo is selected for full screen display. Press the **Zoom** button again to activate the Zoom operation.

Searching Recorded Data

StoreSafe has a powerful search interface feature that allows the user to search for data on the internal hard disk. The user may search the data for previous recording sessions, text insertion, and alarm conditions. Because the search interface is so dynamic, the search interface is covered in detail in a separate section of this manual. See section 5.

Search Button

2.5 Recording

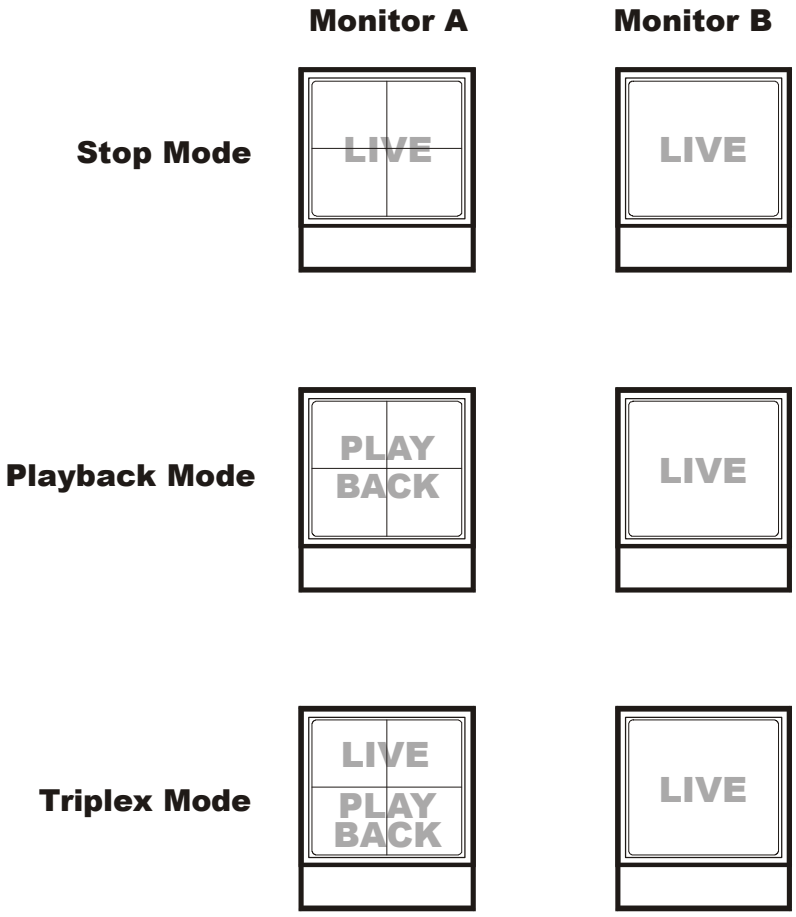
To begin recording, press the **Record** button. Recording will be indicated by the LED located directly above the **Record** button. The unit always starts recording at the end of previously recorded data. The unit will continue recording until the record button is pressed again, unless Record Lock is **ON**.

Record Button

StoreSafe also remembers its current record mode in the event of power loss. If the unit was recording during a power loss, then when power is restored the unit will put itself back in that mode.

Monitor Displays During Recording

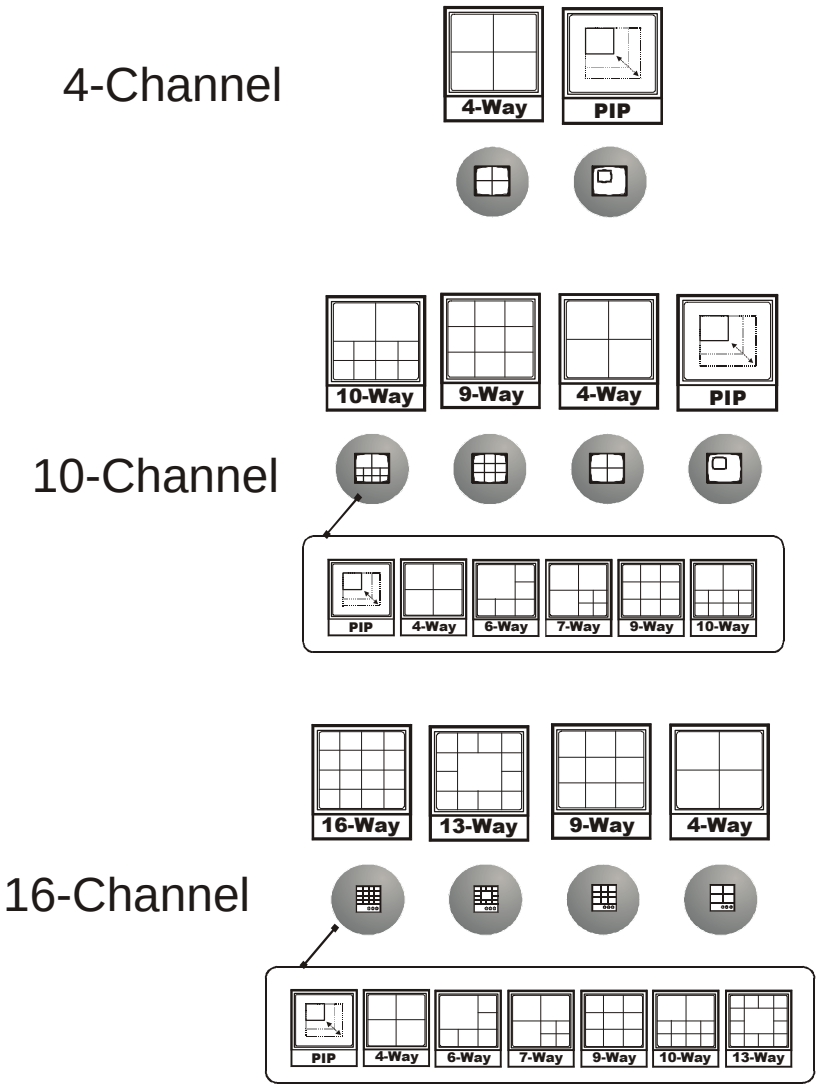
Multiscreen Live and Playback displays on Monitor A and Monitor B are not affected by recording operations.



2.6 Display Options

Available Multiscreen Displays

Press the **Multiscreen** buttons to activate the multiscreen display. Pressing the individual multiscreen button will display the corresponding multiscreen. Pressing the 16-way or 10-way button repeatedly will cycle through all the available multiscreens.



The multiscreen display is limited to the number of camera inputs on the unit.

Four-Channel unit: Only capable of displaying 4-way multiscreen and PIP.

Ten-Channel unit: Capable of displaying 10-way through 4-way multiscreen and PIP.

Sixteen-Channel unit: Capable of displaying 16-way through 4-way multiscreen and PIP.

The camera assignments for each multiscreen is retained (in non-volatile memory) for both Live and Playback multiscreen mode on Monitor A.

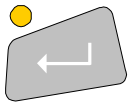
PIP: Use the Jog/Shuttle to adjust the location and size of the PIP display. Please note, that the PIP display is only available on Monitor A in Live mode.

2.7 Active Cameos

A cameo is defined as any cell within a multiscreen display. Active Cameo mode allows the user to access and edit each cameo individually.

Entering Active Cameo Mode

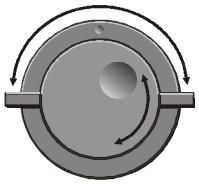
While viewing a multiscreen, enter Active Cameo mode by pressing the **Enter** button. Active Cameo mode is indicated on-screen by flashing the number and titles of the active cameo and the LED above the Enter button is lit. By default, the top left cameo is activated.



Enter Button

Selecting Cameos

Select a cameo using the **Jog/Shuttle** to navigate the multiscreen. Rotating the Jog selects the next screen up or down a row. Rotating the shuttle selects the next screen in numerical order. The active cameo will always be indicated by the flashing camera number and titles.



Jog/Shuttle

Selecting Cameras

Display any camera in the active cameo by pressing the **Number** button of the desired camera. Once a camera has been selected, the active cameo advances to the next cameo on the right.

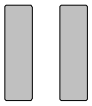
Number Button

The camera selection only changes the multiscreen currently being displayed. Each multiscreen must be configured separately. Changes to the multiscreen display are saved in non-volatile memory, and will be retained even if power is removed from the unit.

Freezing

Press the **Freeze** button to freeze the image in the selected cameo. Each frozen cameo is indicated as * (a flashing asterisk) on-screen.

Press the **Freeze** button again to cancel Freeze operations.



Freeze Button

2.8 Sequencing

The sequencing feature allows a camera to be displayed briefly on-screen, before advancing to the next camera in the sequence list. The default sequence list displays each camera in numerical order.

Sequence Button

Dwell Time

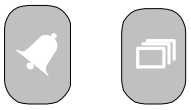
The dwell time is the amount of time each camera is displayed on-screen before advancing to the next camera. The default dwell time is 3 seconds.

Autolist™ Custom Sequence List

The Autolist™ feature allows the user to create a custom sequence list, controlling the order the cameras are displayed and the dwell time. Separate Autolists may be created for Monitor A (Live and Playback mode) and Monitor B (Live mode). Using the **Monitor** button, select the monitor to be programmed. Then, using a **Number** button, select any camera for full screen display.

The unit must be in Full Screen Display mode before starting to create the sequence list. This initial camera is not part the sequence list.

To begin recording the Autolist™ sequence: Press the **Alarm** button and **Sequence** button simultaneously. Autolist Program mode is indicated as **PGM** on-screen.
Recording starts when the first camera number is pressed. Press the camera numbers in the order you wish them to appear on-screen. The amount of time between button presses determines the Dwell Time. During sequence list programming, pressing any button other than a **Number** button or the **Sequence** button voids the sequence list.



Alarm Button and Sequence Button

To end the recording: Press the **Sequence** button. The amount of time between pressing the last **Number** button and the **Sequence** button determines the dwell time for the final camera in the sequence list.

Returning To The Default Sequence List

The default sequence list is all cameras in numeric order with a three second dwell time.

To return the unit to the default sequence list, go to the **Main Menu** ® **Factory Settings** menu.

Caution! Initiating the Factory Setting menu command returns all settings back to the original factory defaults. This will cause the loss of any custom settings.

Sequencing In Cameos

While viewing a multiscreen display, additional cameras (cameras not shown in the multiscreen display) can be sequenced in the lower right hand cameo by pressing the **Sequence** button. The sequence list is not programmable. Press the **Sequence** button again to cancel sequencing.

2.9 On-screen Indicators

There are five types of on-screen indicators.

Camera Titles: Displays the camera number and the camera title.

Status Indicators: Displays Time, Date, and Hard Disk record time left.

Conditional Indicators: Displays indicators for Freeze, Zoom, Alarm, Motion Detection, Videoloss, Autolist™ Program mode, Macro Record and Macro Playback mode.

Status Display Box: Displays Archive Device, Network status and Image Quality Setting (Playback mode only).

Text Display Box: Displays ATM/POS Text data.

Camera Titles

Camera Titles are displayed on either the upper or lower corner of the left hand side of the screen. The camera title can be changed in the menu system (see section 3.13). The user can change display position and color. See below.

Changing Position And Color Of Title And Status Indicators

Camera Titles: To change the color and position of the camera titles, select a camera for full screen display, then press the **Enter** button to advance to the next display setting. Repeatedly pressing the **Enter** button advances the display settings through the sequence show in the table on the right.

Example: Select **Camera 1** for full screen display. Using the **Enter** button, cycle through the sequence shown on the right. Each time the position cycle is completed, the unit advances the Status Indicator color. Choose Black, White or Gray.

Position	Color
Top Left	Black
Top Left	White
Top Left	Gray
Bottom Left	Black
Bottom Left	White
Bottom Left	Gray
Title not displayed	

Status Indicators

Status indicators are displayed on the upper right hand corner of the screen.

Status indicators include:

- Time and Date (these can be turned off in the menu system, see section 3.8). The Time and Date format can also be changed in the menu system.
- Time remaining on Hard Disk(s).

Conditional Indicators

Condition	Full Screen Indicator	Multiscreen Indicator
Alarm	**ALM**	**A** in cameo of camera in alarm
Autolist™ Program mode	**PGM**	**PGM**
Freeze	**FRZ**	***** (Asterisk) in frozen cameo
Macro Record mode	**F** followed by macro number	**F** followed by macro number
Motion Detection	**M**	**M** in cameo w/ motion detection
Videoloss	**VDL**	**V** in cameo with videoloss
Zoom	**ZOOM**	**ZOOM**

Status Display Box

A Status Display Box can be viewed by pressing the Camera Number button twice. Status Indicators include:

On Live Fullscreen:

- Archive Status: **Not Connected**, **Not Ready**, **Ready**, **Ejecting, Play,** and ***timeleft***. *Timeleft* indicates the amount of time before the archive medium is full (Only available if the unit has Background Archiving turned On).
- Network: Displays all current Network connections. Normal connection is displayed as **ip.ip** or **---** if there is no connection. Live connections are displayed as **E1: ip.ip**, **E2: ip.ip, etc.** (where ip.ip represents the last 2 bytes of the IP Address). POTS connection is displayed as **IP 1.1.**

On Playback Fullscreen:

- All the above, including Image Quality Setting: **High, Medium, Standard**.

ATM/POS Text Display

Pressing the Camera Number a third time displays an ATM/POS text display. This feature can be used during live viewing mode to verify that StoreSafe is receiving ATM/POS text, or in Playback mode to review recorded text and video.

This feature is not available in the standard model.

2.10 Triplex Mode

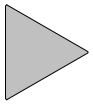
Triplex mode allows the display of both live and playback images to appear on Monitor A simultaneously. Live images have gray borders, while playback images have black borders.

To enter Triplex mode, press the Play Forward button while in Play Forward mode. Alternatively, press the Play Reverse button while in Play Reverse mode. Both the Play Forward LED and the Stop LED turn on to indicate that the unit is in Triplex mode.

Monitor B always displays a fullscreen live display whenever Triplex mode is entered.

Play Forward

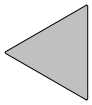
When in Play Forward mode and the Play Forward button is pressed, the unit will enter the Triplex mode of operation. When Play Forward is pressed again, the unit will revert back into the normal Playback mode. While in the Triplex mode, if reverse play is in progress, the Play Forward button will change the playback direction.



Play Forward Button

Reverse Play

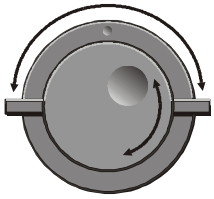
When in Reverse Play mode and the Reverse Play button is pressed, the unit will enter the Triplex mode of operation. When Reverse Play is pressed again, the unit will revert back into the normal Playback mode. While in the Triplex mode, if forward play is in progress, the Reverse Play button will change the playback direction.



Reverse Play Button

Fast Forward

During Triplex mode, rotate the **Shuttle** (the outer dial) clockwise to view playback images at a higher than normal rate. Increasing the amount of rotation increases the rate of playback. Live images are not affected.



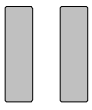
Jog / Shuttle

Rewind

During Triplex mode, rotate the **Shuttle** counter-clockwise to view playback images (in reverse) at a higher than normal rate. Increasing the amount of rotation increases the rate of playback. Live images are not affected.

Freeze

During Triplex mode, pressing the **Freeze** button pauses all multiscreen images, both Live and Playback.



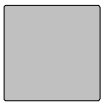
Freeze Button

Single Frame Advance & Single Frame Rewind

During Freeze or Pause mode, rotate the **Jog** (the inner dial) to view the frame directly before or after the frame displayed on-screen. Only the playback images are affected.

Stop

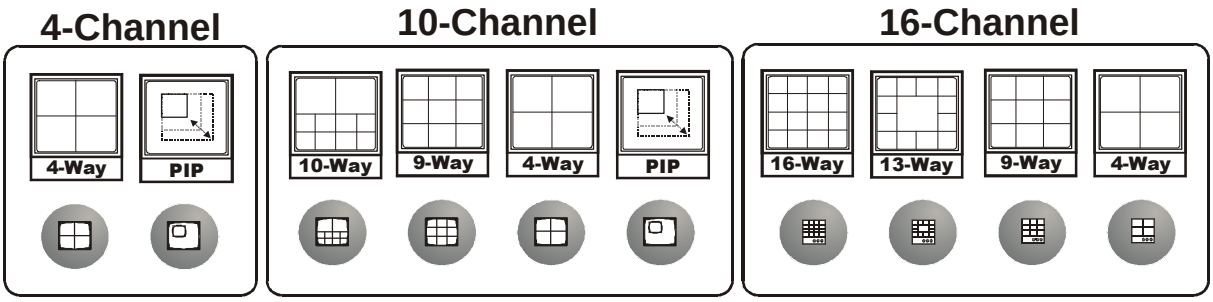
To stop Triplex mode and return to Live mode on Monitor A, press the **Stop** button.



Stop Button

Multiscreen Display

During Triplex mode, press one of the **Multiscreen** buttons to activate a multiscreen display. The 6-way and PIP multiscreen displays are not available in Triplex mode. For detailed information about Multiscreen displays, see section 2.6. The Live and Playback images in a multiscreen display may be transposed by pressing the multiscreen button that corresponds with the current multiscreen display.



E.g. If the current display is a 4-way multiscreen with the 2 top cameos being playback images and the rest of the cameos being live images, pressing the 4-way multiscreen button will result in the 2 top cameos being live and the rest of the cameos being playback images.

Multiscreen Display With Sequencing

If a multiscreen display does not include all of the cameras, the remaining cameras can be sequenced in the bottom right cameo. While in a multiscreen display, press the **Sequence** button to begin sequencing. For detailed information about sequencing, see section 2.8. This feature is not available on the 4-channel units.

Sequence Button

Full Screen Display

Select any camera for Full Screen display by pressing the **Number** button of the desired camera. Pressing the Camera number button again displays the Status Display Box. Pressing the same button a third time displays any associated ATM or cash register ASCII text.

Number Button

Sequenced Full Screen Display

While in a Full Screen display, press the **Sequence** button to begin full screen sequencing. The sequence list is programmable. For detailed information about programming the sequence list see section 2.8.

Sequence Button

Zooming

To activate the 2x digital zoom, select the full screen display of the camera you wish to zoom, then press the **Zoom** button. Zooming will be indicated by the LED located directly above the **Zoom** button. Zooming is also indicated as **ZOOM** on the monitor. Zooming works with frozen and non-frozen images. Zoomed images can also be frozen.

Zoom Button with LED

While Zoomed, use the **Jog/Shuttle** to Pan and Tilt across the image. Please note, the camera does not move during digital Pan/Tilt.

Press the **Zoom** button again, or another camera button to cancel the Zoom operations.

If the **Zoom** button is pressed while in a multiscreen display, the camera from the last active cameo is selected for full screen display. Press the **Zoom** button again to activate the Zoom operation.

2.11 The Print Image Button

Pressing the **Print Image** button will print the currently displayed image. If a 4-way multiscreen is the display mode, StoreSafe will switch to a single image display of the last selected fullscreen camera, freeze the image, and send to the default printer.

Print Image Button

Printer Setup

The following equipment and conditions are required for the operation of the Print Image button.

Equipment
HP DeskJet 3820
Hawking Print Server PN7127P

Conditions
The Printer and Print Server must be connected to the same local network as StoreSafe.

StoreSafe must know the Print Servers IP address. The IP address can be input under **Main Menu – Communications – Ethernet – Ethernet Settings** (See Section 3.16).

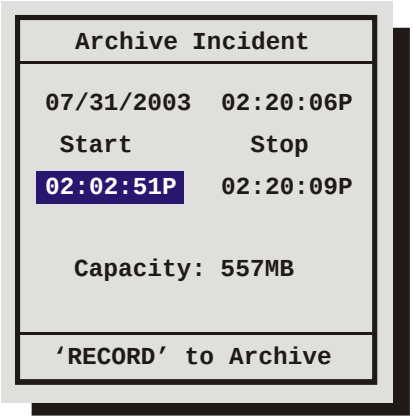
The Printer and Print Server must be On-line and Operational.

2.12 The Record CD Button

To record video to CD for archival or law enforcement purposes, follow the steps listed below:

Record CD Button

1. Insert a blank recordable CD (CD-R) into the CD tray. Wait a few minutes for the CD Writer to come ready. To check the archive devices status use the **Status Display Box**. The Status Display Box can be viewed by pressing the Camera Number button twice. The LED will turn green when the device is ready.
2. Press the **Record CD** Button. If the CD Writer is ready the Archive Incident screen will appear,
3. Use the **Jog** to modify the time parameters and use the **Shuttle** to move between the Start and Stop fields.
4. Press the **Record** button on the front panel when satisfied.
5. The CD Writer will open the CD tray when completed.



The video may now be viewed on any PC equipped with a CD-ROM.

3 Menu System Overview

3.1 Menu Notation In This Manual

In the following sections, there are headings like this:

❑ **Main Menu → Time/Date → Set Time**

Meaning: From the Main Menu, select Time/Date, then press the **Enter** button. The Time/Date menu will appear. From the Time/Date menu, select Set Time, then press the **Enter** button. A pop-up or pull-down menu will appear.

Selected Items

Items selected in the menu system are represented in the manual as follows:

Selected

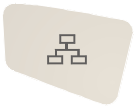
Time/Date

Not Selected

Time/Date

3.2 Accessing The Menu System

Enter the menu system by pressing the **Menu** button. A Password Box will appear on the primary monitor. Enter either the:



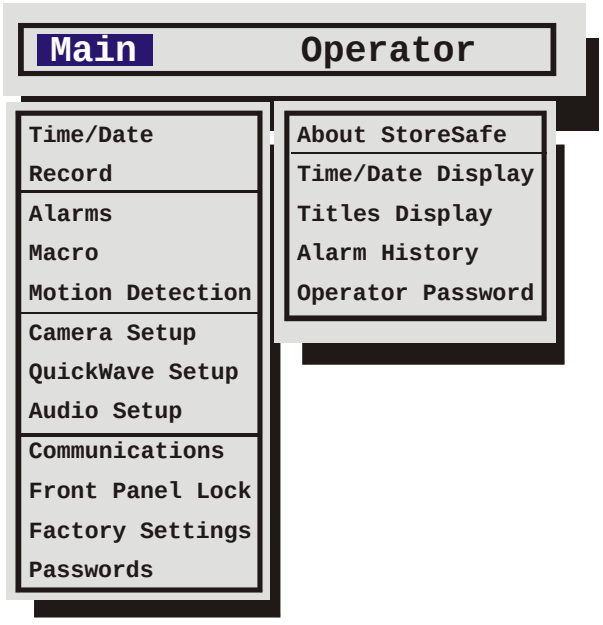
Menu Button

- **Operator Password:** Providing limited access to the menu system. Only the Operator menu is available.
- **Installer Password:** Providing complete menu access.

Use the **Number** buttons to enter the appropriate password.

Default passwords are provided in the beginning of this manual, in section 1.

3.3 Available Menus



3.4 Menus In This Manual

Each menu is covered in detail in this chapter of this manual. Menus and Menu Items appear in the manual in the same order they appear on-screen.

- **Main Menu**
- **Operator Menu**

3.5 Navigating The Menu System

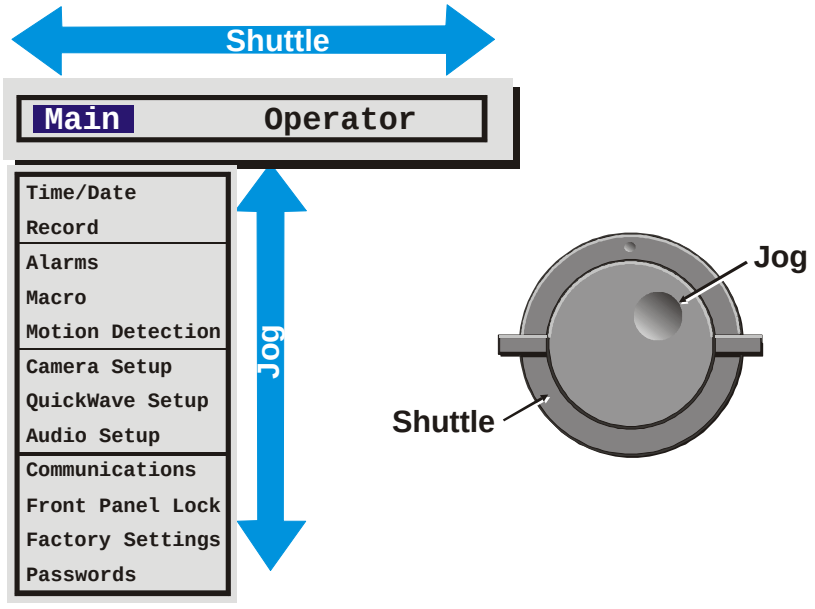
Selecting a Menu from the Menu Bar: When the menu system is first accessed, only the menu bar is displayed. Use the **Shuttle** to select the desired menu.

Opening the Drop Down Menus: Rotate the **Jog**.

Navigating in Menus: Rotate the **Jog** to highlight items in the drop-down menus.

Selecting Menu Items: Hit the **ENTER** button to select the highlighted menu item.

Exiting Menus: Press the **Menu** button to exit a menu. From the menu bar, press the **Menu** button to exit the menu system completely.



3.6 Menu Shortcuts

Zoom Button: In menu lists that have 2 settings per camera, the Zoom button will toggle all selections. This provides a quick and easy way to enable or disable all cameras for a particular feature.

Camera Button: In menu lists that provide settings per camera, a particular camera may be accessed directly by pressing on the associated camera button. Rotate the Shuttle to modify the setting.

3.7 The Main Menu

Main Menu Overview

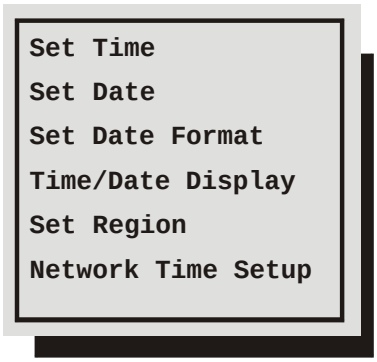
The Main menu contains the majority of programmable options for StoreSafe. Each item in the Main menu is described in detail in this section of the manual.

Main menu items appear in this section in the same order they appear in the menu.

3.8 Time/Date

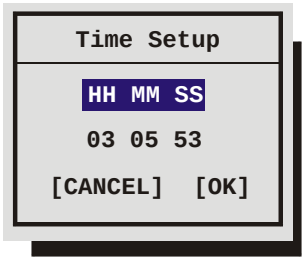
Use this menu to specify:

- The time and date.
- The date format: MM/DD/YY, YY/MM/DD, or DD/MM/YY.
- Which monitors will display the time and date.
- Set Regional Daylight Savings Time.
- Setup clock synchronization between StoreSafe and Network Server.



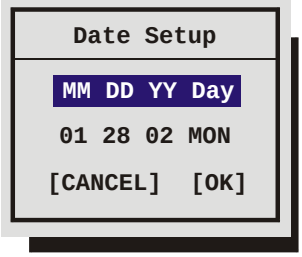
❑ Main Menu ® Time/Date ® Set Time

1. Rotate the **Shuttle** to navigate, highlight **HH MM SS**.
2. Press the **Enter** button, the highlighting will move to the row of numbers.
3. Enter the time in Hours, Minutes, and Seconds. Rotate the **Jog** to change the values and the **Shuttle** to navigate.
4. Press the **Enter** button to confirm the selection and exit the edit mode.
5. **To save the changes and exit the menu:** Rotate the **Jog** to select **[OK]**, then press the **Enter** button.
6. **To exit the menu without making changes:** Rotate the **Jog** to select **[CANCEL]**, then press the **Enter** button.

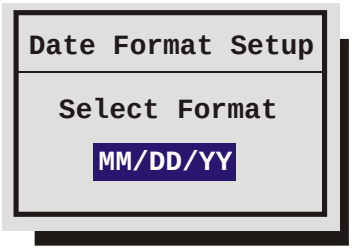


❑ Main Menu ® Time/Date ® Set Date

1. Press the **Enter** button, the highlighting will move to the row of numbers.
2. Enter the date in Months, Days, Years. The day of the week is calculated automatically. Rotate the **Jog** to change the values and the **Shuttle** to navigate.
3. Press the **Enter** button to confirm the selection and exit the edit mode.
4. **To save the changes and exit the menu:** Rotate the **Jog** to select **[OK]**, then press the **Enter** button.
5. **To exit the menu without making changes:** Rotate the **Jog** to select **[CANCEL]**, then press the **Enter** button.



❑ Main Menu ® Time/Date ® Set Date Format



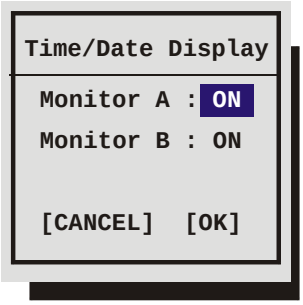
Rotate the **Jog** to set the desired date format. Select from either:

- MM/DD/YY
- DD/MM/YY
- YY/MM/DD

Press the **Enter** button to confirm the selection and exit the menu.

Press the **Menu** button to exit the menu without making changes.

❑ Main Menu → Time/Date → Time / Date Display



Use this menu to specify if the time and date will be displayed on:

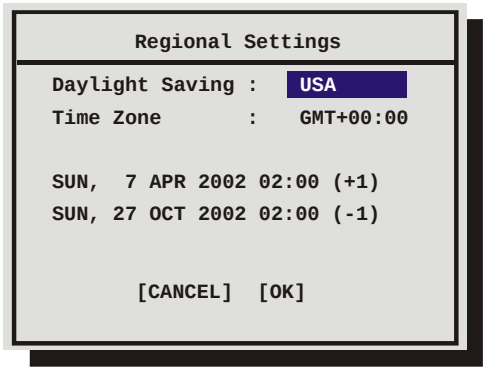
- Monitor-A.
- Monitor-B.
- Both Monitors.
- Not Displayed

Rotate the **Jog** to navigate, then rotate the **Shuttle** to change the values.

Save changes and exit the menu: Select **[OK]**, then press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

❑ Main Menu ® Time/Date ® Set Region



Use this menu to set the region for the Auto Daylight Savings Time feature. Choices are:

- **OFF:** Clock will not be changed automatically, but can still be adjusted by one hour using the daylight saving macros.
- **USA:** DST starts at 02:00 on the first Sunday in April. DST ends at 02:00 on the last Sunday in October. Includes: United States (except Hawaii, American Samoa, Guam, Puerto Rico, Virgin Islands, parts of Indiana and Arizona) and Canada (except Saskatchewan).
- **EUR:** DST starts at 01:00 GMT on the last Sunday in March. DST ends at 01:00 GMT on the last Sunday in October. Includes: European Union Countries.
- **AUS:** DST starts at 02:00 on the last Sunday in October. DST ends at 03:00 on the last Sunday in March. Includes: South Australia, Victoria, ACT, NSW. Excludes: Tasmania.

The Time Zone must be set correctly to ensure that the DST adjustments are made at the right time. It is also required for accurate email time stamping.

The clock will only be automatically adjusted once on a given time and date. If you manually set the clock back before the last DST change, the time will not get automatically adjusted again for that same time change.

❑ Main Menu → Time/Date → Network Time Setup

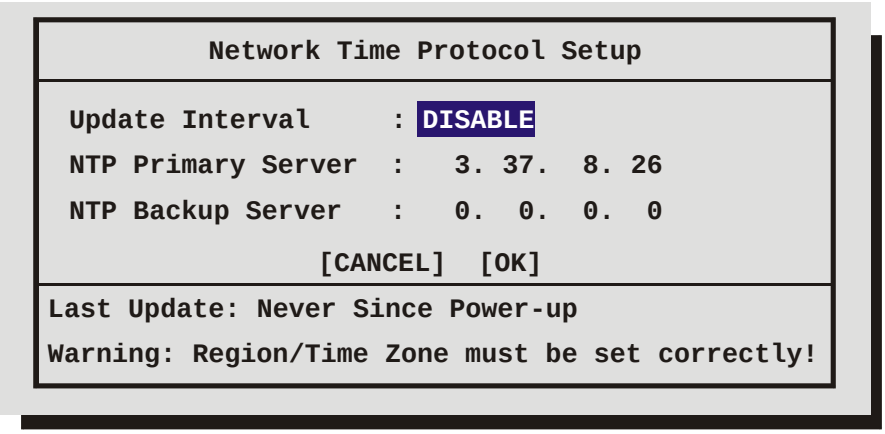
Use this menu to enable/disable and specify how often time synchronization should occur between StoreSafe and the Network Server. The Region /Time Zone must be setup prior to enabling the option.

Update Interval, Select from: Enable, Disable, Once per Day, Twice per Day, and Once per Hour

NTP Primary Server: Enter IP Address of Primary Server.

NTP Backup Server: Enter IP Address of Backup Server.

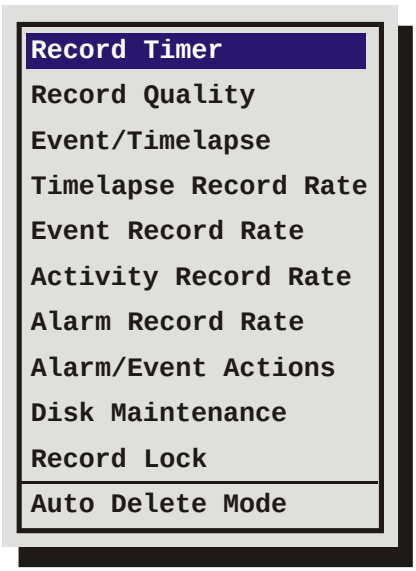
1. To save changes and exit the menu: Select **[OK]**, then press the **Enter** button.
2. To exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, and then press the **Enter** button.



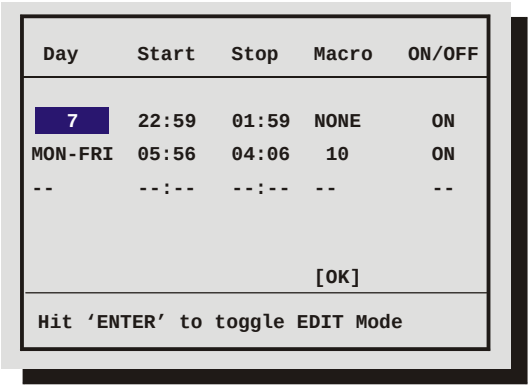
3.9 Record

Use this menu to:

- Specify a schedule for recording.
- Specify the record quality: High, Medium, or Standard.
- Specify if a camera is to be used for event recording, time-lapse recording, or both.
- Specify the time-lapse record rate per camera.
- Specify the event record rate per camera.
- Specify the activity record rate per camera.
- Specify the alarm record rate.
- Setup the Alarm/Event actions.
- Perform disk maintenance by Deleting, Un-deleting, or Destroying previously recorded video.
- Set the Record Lock feature.
- Set the Auto Delete Mode.



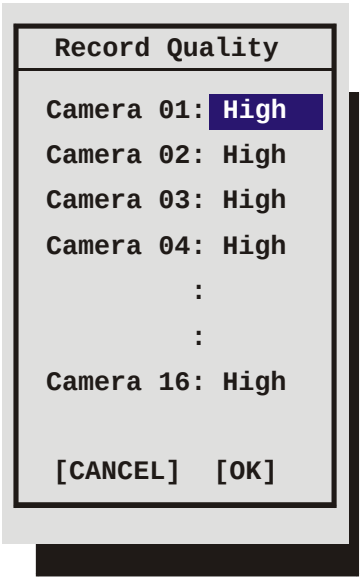
❑ Main Menu ® Record ® Record Timer



Use this menu to setup Preset Record Timer Events.

1. Rotate the **Shuttle** to select a timed event from the list.
2. Press the **ENTER** button to enter the **Edit** mode.
3. Rotate the **Shuttle** to navigate to the desired field.
4. Rotate the **Jog** to change the values of the selected field.
5. Press the **Enter** button to exit the **Edit** mode.
6. Rotate the **Jog** to highlight the **[OK]** field and press the **ENTER** button to save the changes.

❑ Main Menu ® Record ® Record Quality

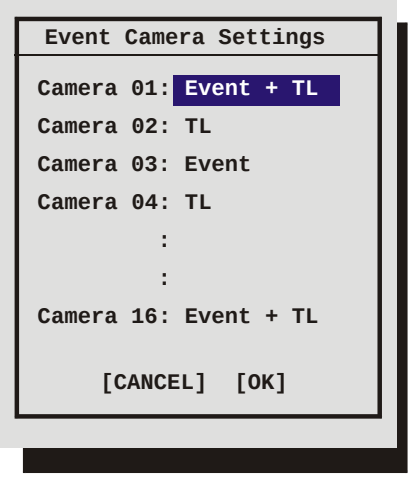


Use this menu to specify the record quality for each camera. Decreasing the record quality decreases the amount of disk space required to store the images, due to a higher compression scheme.

Record Quality	Picture Quality	Disk Space Needed
High	Excellent	Most
Medium	Good	Medium
Standard	Fair	Least

3. Rotate the **Jog** to navigate, and the **Shuttle** to change the values.
4. To save changes and exit the menu: Select **[OK]**, then press the **Enter** button.
5. Exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, and then press the **Enter** button.

❑ Main Menu ® Record ® Event/Timelapse



Use this menu to specify how each camera will record during normal and event conditions.

TL: Records at the Time-lapse Record Rate under normal conditions. Does not change record rate during an event.

Event: Records during events at the Event Record Rate. Camera does not record under normal conditions.

Event + TL: Records at the Time-lapse Record Rate under normal conditions. Records at the Event Record Rate during events.

About Events: An Event is an action that the unit acknowledges by recording at the Event Record Rate, yet it is not cause for an Alarm. Events may be created two ways, via RS232 text insertion and Activity detection.

Example of an Event: A camera is pointed at the front door inside the lobby during business hours. With the Event Camera Settings Type set to Event, the unit does not record while the doorway is empty. When activity motion detection senses that someone is entering or leaving the doorway, the unit begins recording at the Event Record Rate and stops recording when the motion ceases.

RS232 Event: See section 8 for information about generating an Event via RS232, and optionally inserting ASCII text to mark the Event.

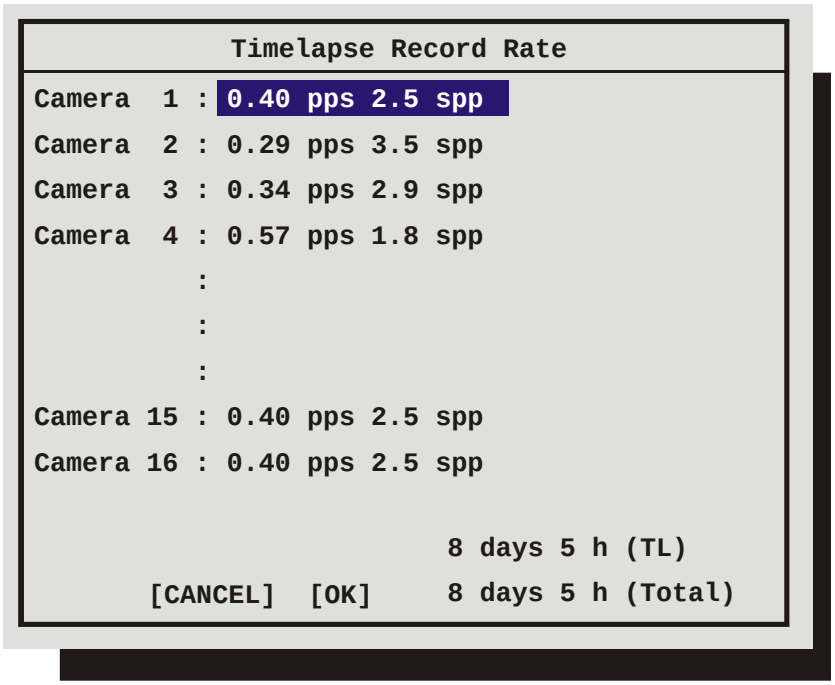
Activity Detection Event: See Setup Parameters in section 3.13 for detailed information about configuring activity detection as an event in the menu system.

❑ Main Menu ® Record ® Timelapse Record Rate

The unit records at the Timelapse Record Rate under normal conditions, when there are no alarms, events, or activity present. Record rates are measured in both Pictures Per Second (pps) and Seconds Per Picture (spp).

The maximum record rate per camera is inversely proportional to the number of cameras connected to the unit. The fewer cameras connected, the higher the maximum record rate for each camera, and vice versa. The maximum record rate for multiple cameras is 24pps (NTSC)(20pps PAL). The maximum record rate for a single camera is 30pps (NTSC)(25pps PAL).

The bottom right corner of the menu contains a record duration calculator. The top line indicates the estimated recording time for the unit in Time-lapse record mode only. The bottom line indicates the estimated recording time, taking into consideration the amount of time the unit will spend in Activity, Event, and/or Alarm record mode.



1. Rotate the **Jog** to navigate, and the **Shuttle** to change the values.

2. To save changes and exit the menu: Select **[OK]**, and then press the **Enter** button.
3. To exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

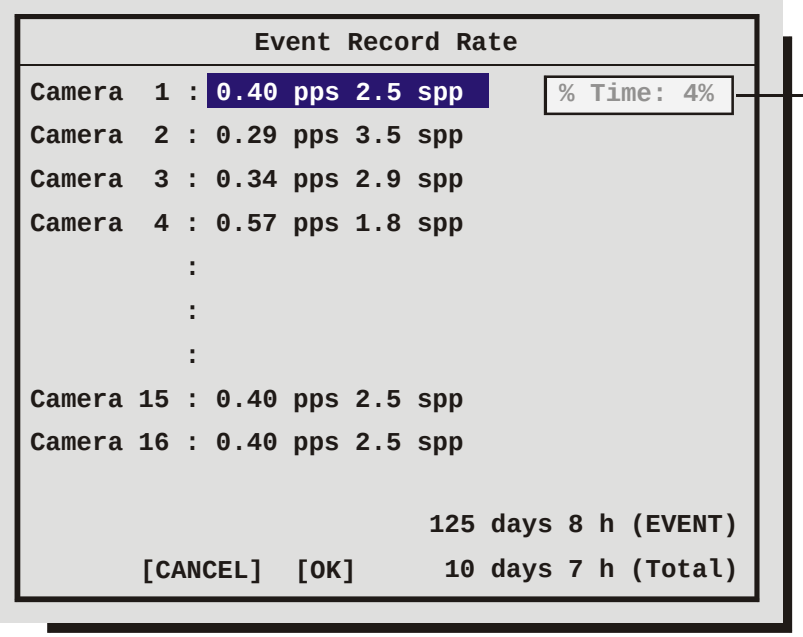
❑ Main Menu ® Record ® Event Record Rate

The unit will record at the Event Record Rate when an Event is activated. Events can be activated by RS232 event generation or activity detection. See **Event Settings** on page 29.

Record rates are measured in both Pictures Per Second (pps) and Seconds Per Picture (spp).

The maximum record rate per camera is inversely proportional to the number of cameras connected to the unit. The fewer cameras connected, the higher the maximum record rate for each camera, and vice versa. The maximum record rate for multiple cameras is 24pps (NTSC)(20pps PAL). The maximum record rate for a single camera is 30pps (NTSC)(25pps PAL).

The bottom right corner of the menu contains a record duration calculator. The top line indicates the estimated recording time of the cameras in Event record mode only. The bottom line indicates the estimated recording time, taking into consideration the amount of time the unit will spend in Time-lapse, Activity, Event, and/or Alarm record mode.



Estimate of the % of time each camera will typically spend in Event mode. For example if you expect to have about 20 total events each day, each lasting 3 minutes on average, then the % of the time will be 4%. (1 hour/24 hours)

1. Rotate the **Jog** to navigate, and the **Shuttle** to change the values.
2. To save changes and exit the menu: Select **[OK]**, and then press the **Enter** button.
3. To exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

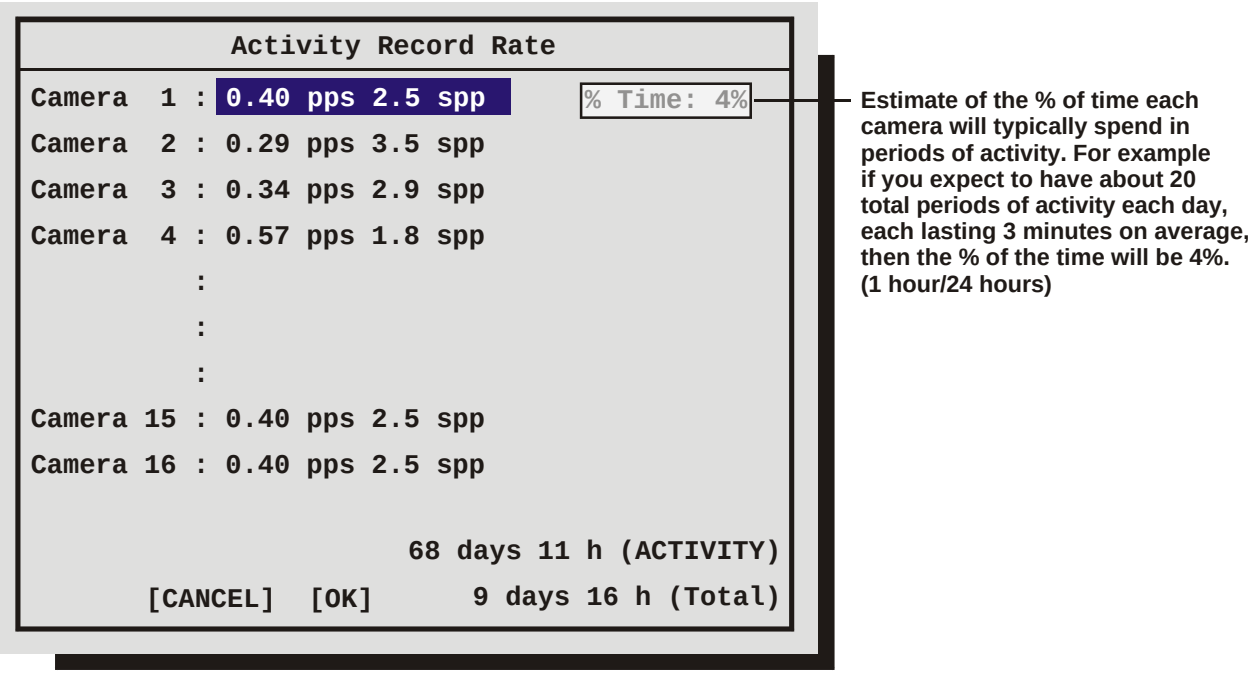
❑ Main Menu ® Record ® Activity Record Rate

The unit will record at the Activity Record Rate when the camera is in normal Timelapse Record Mode and activity is detected in the camera scene. Activity should not be linked to Event, in which case the Event Record Rate will be used.

Record rates are measured in both Pictures Per Second (pps) and Seconds Per Picture (spp).

The maximum record rate per camera is inversely proportional to the number of cameras connected to the unit. The fewer cameras connected, the higher the maximum record rate for each camera, and vice versa. The maximum record rate for multiple cameras is 24pps (NTSC)(20pps PAL). The maximum record rate for a single camera is 30pps (NTSC)(25pps PAL).

The bottom right corner of the menu contains a record duration calculator. The top line indicates the estimated recording time of the cameras in Activity record mode only. The bottom line indicates the estimated recording time, taking into consideration the amount of time the unit will spend in Time-lapse, Activity, Event, and/or Alarm record mode.

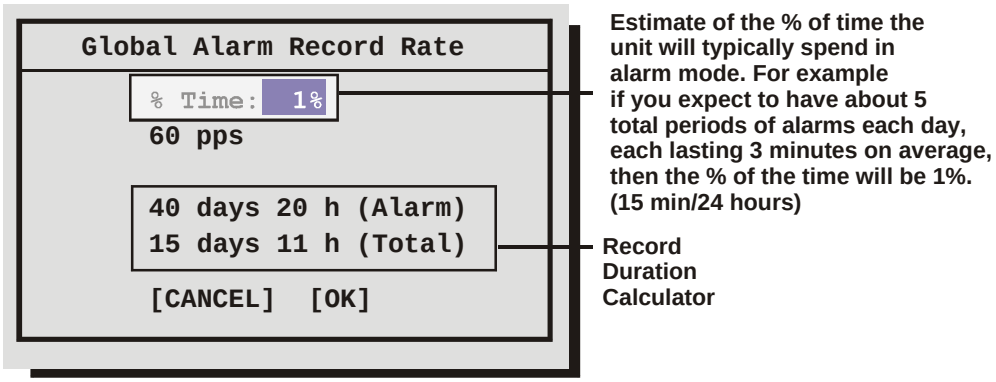


1. Rotate the **Jog** to navigate, and the **Shuttle** to change the values.
2. To save changes and exit the menu: Select **[OK]**, and then press the **Enter** button.
3. To exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the Enter button.

❑ Main Menu ® Record ® Alarm Record Rate

During an alarm, the unit records at the alarm record rate. The bottom of the menu contains a record duration calculator. The top line indicates the estimated recording time of the cameras in Alarm record mode only. The bottom line indicates the estimated recording time, taking into consideration the amount of time the unit will spend in Time-lapse, Activity, Event, and/or Alarm record mode.

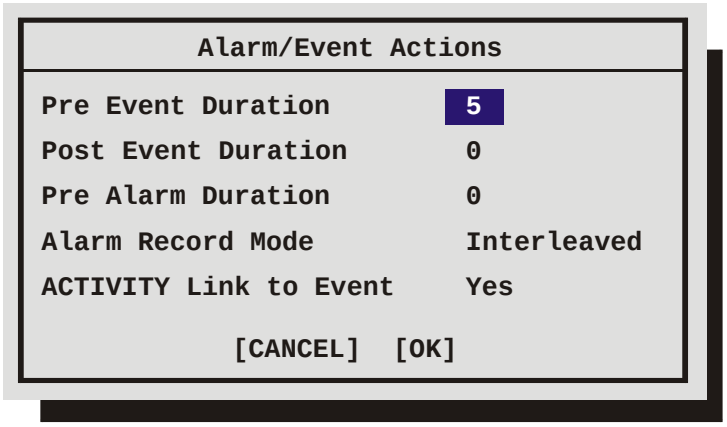
The configuration of the Alarm Record Rate is closely associated with the Alarm Record Mode. For detailed information about configuring the Alarm Record Mode, see Alarm Record mode in section 3.11.



1. Rotate the **Jog** to navigate, and the **Shuttle** to change the values.
2. To save changes and exit the menu: Select [OK], and then press the Enter button.
3. To exit the menu without making changes: Press the Menu button, or select [CANCEL], then press the Enter button.

❑ Main Menu ® Record ® Alarm/Event Actions

Use this menu to specify how the unit will record during Alarm and Event actions.



Pre Event Duration: The unit will record up to 5 seconds of data ahead of the event trigger, at the Event Record Rate. Select from 0 to 5 seconds. This option is not available on the standard model.

Post Event Duration: The unit will record up to 250 seconds after the completion of the Event, at the Event Record Rate. Select from 0 to 250 seconds.

Pre Alarm Duration: The unit will record up to 5 seconds of data ahead of the alarm trigger, at the Alarm Record Rate. Select from 0 to 5 seconds.

Alarm Record Mode: Select from Interleaved or Exclusive.

ACTIVITY Link to Event: Select from Yes or No.

❑ Main Menu ® Record ® Disk Maintenance

Use the Jog to select from the following options, then press the **Enter** button to begin.

Delete: Delete all data from the hard disk (with the possibility of restoring it).

Undelete: Restore data that has been deleted, but not yet overwritten.

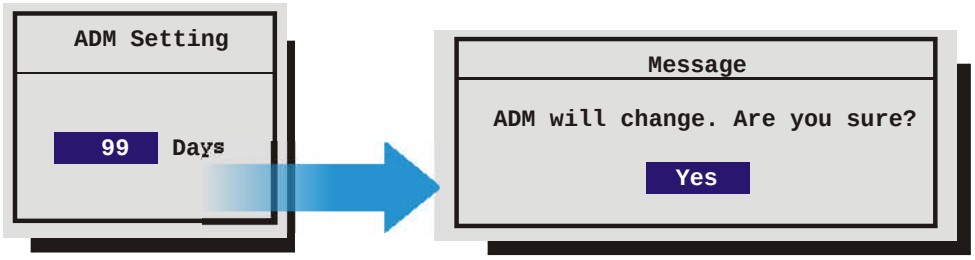
Destroy: Erase all data from the hard disk permanently, **without the possibility of restoring it**. Selecting this option brings up a confirmation dialog box.

❑ Main Menu ® Record ® Record Lock

Use this menu to set the Record Lock feature. This feature disables the front panel record button. Setting Record Lock to ON will start the unit recording if it is not currently in the Record mode.

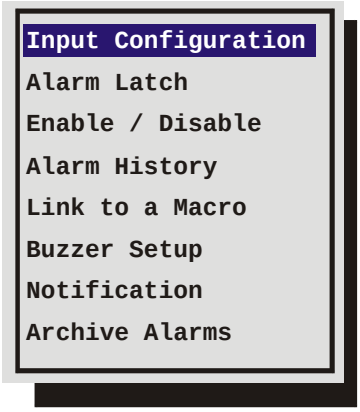
❑ Main Menu ® Record ® ADM (Auto Delete Mode)

The ADM feature prevents the unit from displaying or archiving any search results that are more than thirty days old. This feature may be required by law in some jurisdictions. If required by local authorities, the ADM feature must be turned **On** by selecting between 7 and 99 days. Typically this feature is turned **Off**.



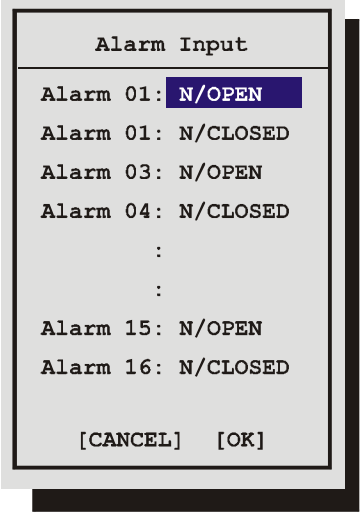
3.10 Alarms

Use this menu to configure the alarm handling features of the unit.



Caution! StoreSafe's primary function is to furnish video multiplexing and recording with a multiscreen display. Although the unit has alarm handling and motion detection functions, these are considered secondary features. **This unit should not be the only alarm device on site.**

❑ Main Menu ® Alarms ® Input Configuration



Configure the alarm inputs as either Normally Open or Normally Closed.

Configure inputs as follows.

Normally Open Zero Potential Relay Contact: Configure in menu as Normally Open.

Normally Closed Zero Potential Relay Contact: Configure in menu as Normally Closed

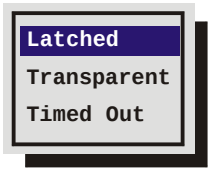
TTL Active High: Configure in menu as Normally Closed.

TTL Active Low: Configure in menu as Normally Open.

Open Collector Active On: Configure in menu as Normally Open.

Open Collector Active Off: Configure in menu as Normally Closed.

❑ Main Menu ® Alarms ® Alarm Latch



This feature determines how the unit latches alarm conditions.

Selecting from the following options.

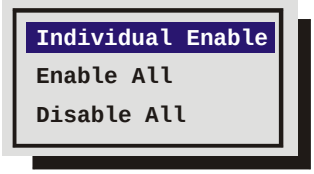
Latched: The alarm is activated until it is silenced and acknowledged by the user.

Transparent: The alarm is active only while receiving alarm input. The alarm condition is canceled when the alarm input ceases.

Timed Out: The alarm condition is latched for the amount of time selected in this menu, then it is automatically silenced and acknowledged. If the alarm input exceeds the duration specified in this menu, the unit silences and acknowledges the alarm when the alarm input ceases. Select the timeout duration, the range is from 1 to 250 seconds.

Transparent alarms cannot be silenced and acknowledged. If transparent mode is preferred, but the ability to silence and acknowledge alarms is desired, select Timed Out and set the Alarm Timeout to two seconds.

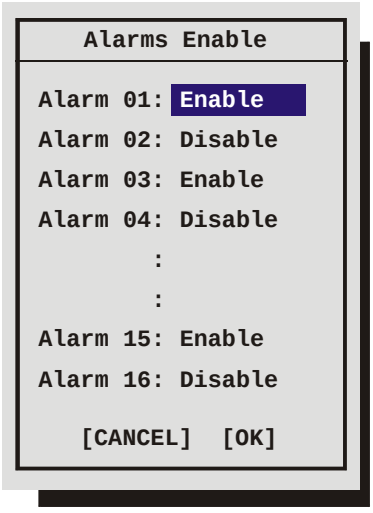
❑ Main Menu ® Alarms ® Enable / Disable



Use this menu to Enable or Disable the alarm inputs.

Select from the following options:

- **Individual Enable:** Allow the user to access the Alarm Enable submenu, and enable or disable alarm inputs on a per camera basis.
- **Enable All**
- **Disable All**

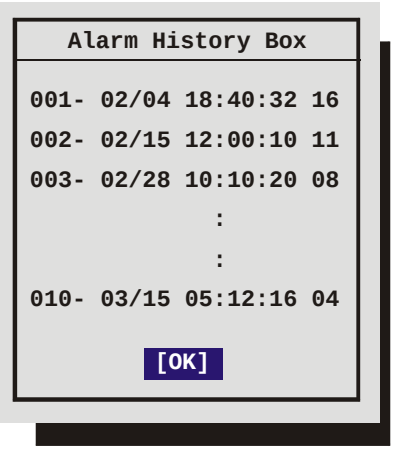


Rotate the **Jog** to navigate, and the **Shuttle** to change the values.

Save changes and exit the menu: Select **[OK]**, then press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

❑ Main Menu ® Alarms ® Alarm History



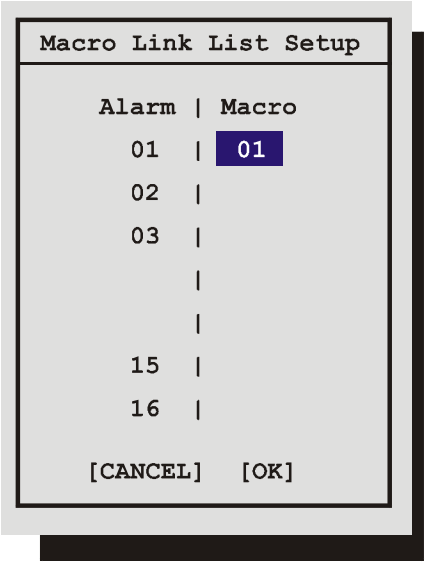
Use this window to view a list of the 100 most recent alarms. Alarms are displayed 10 at a time. Rotate the **Jog** to scroll through the alarms.

Information displayed in this window is:

- The alarms number in the list.
- The date of the alarm (month and day).
- The time of the alarm (hours, minutes, and seconds).

The number of the camera input in alarm.

❑ Main Menu ® Alarms ® Link To A Macro



Use this menu to link an alarm input to a macro. If a link is created, a macro will run each time that alarm is activated.

Alarm: Select the alarm input you would like to link.

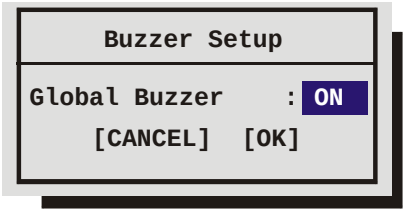
Macro: Select the macro number you wish to link to. Leave this setting blank if you do not wish to link to a macro.

Rotate the **Jog** to navigate, and the **Shuttle** to change the values.

Save changes and exit the menu: Select **[OK]**, then press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

❑ Main Menu ® Alarms ® Buzzer Setup



Use this menu to configure the internal buzzer.

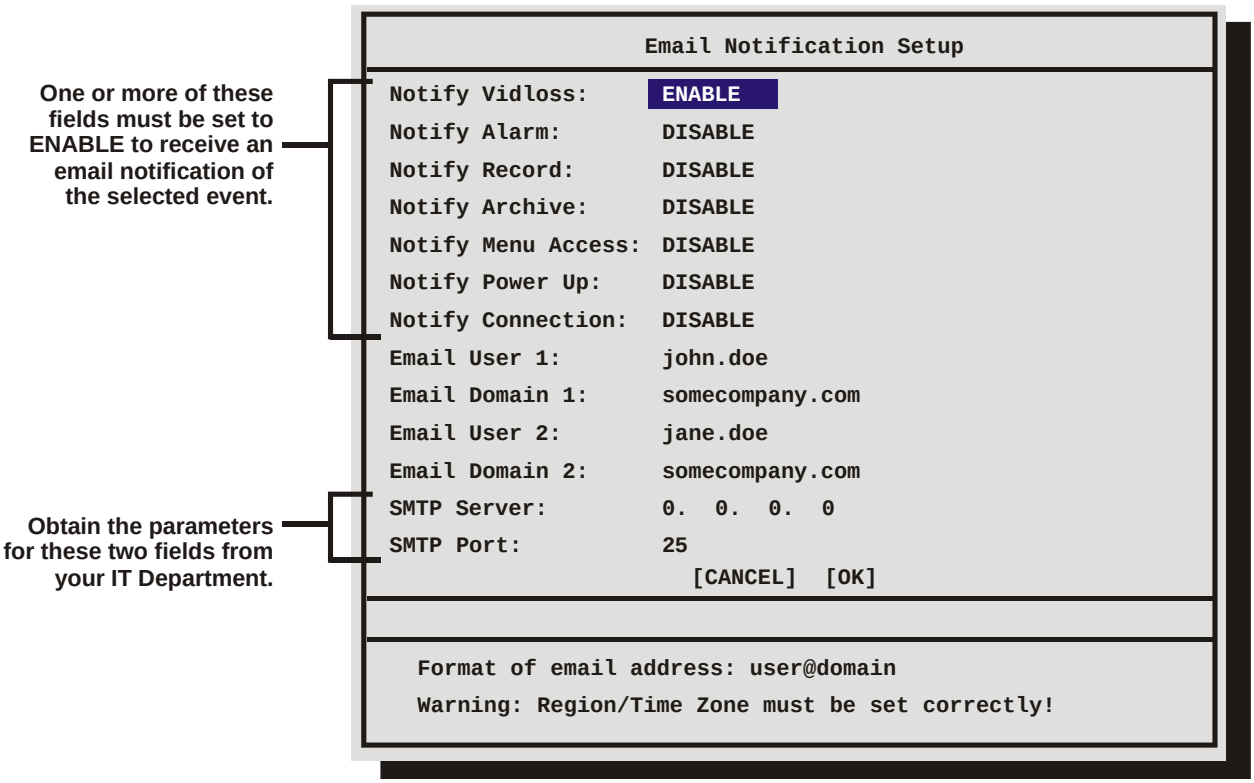
Global Buzzer: The Global Buzzer setting acts as a master On/Off switch. Setting the Global Buzzer to **OFF** deactivates all buzzer activity.

❑ Main Menu ® Alarms ® Notification

Use this menu to select Email Alarm Notification.

Email Notification Setup

This screen allows the user to setup the types of events to be notified of, and the email addresses (up to two) to be notified. Follow the context sensitive on-screen instructions to setup the individual fields. Also, please note that the Region/Time Zone setting must be set correctly for Email notification to time stamp messages accurately.

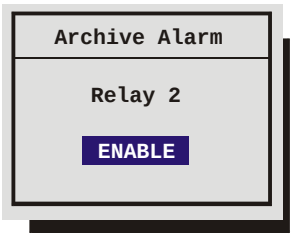


Email Address Format

The format of the email addresses should be entered as follows. If the email address to be notified is john.doe@somecompany.com, then john.doe should be entered in one of the **Email User** fields and somecompany.com should be entered in the subsequent **Email Domain** field.

❑ Main Menu ® Alarms ® Archive Alarms

Selecting **Enable** from this menu will cause the unit to activate Relay 2 if a malfunction occurs while archiving.



3.11 Macro

A macro is a recorded sequence of keystrokes. The number of macros depends on the number of camera inputs. Each macro can have up to 32 keystrokes.

Use this menu to:

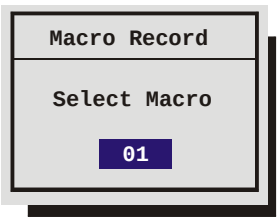
- Enter Macro Record mode.
- Program a scheduled start time for a macro.

❑ Main Menu ® Macro ® Macro Record

Note: Do not attempt macro programming while the front panel is locked.

To begin recording a macro:

1. Select the macro number you wish to record, then press the **Enter** button. The unit will automatically exit the menu



system and go to a starting point. Macro Record mode is indicated as **F** and the **Macro Number** on-screen.

2. From this point, begin recording the desired keystroke sequence. Record up to 32 keystrokes. If 32 keystrokes are exceeded, the unit will end the macro recording automatically.
3. When finished programming, press the **Function** button then the **Enter** button to end the macro recording. A form is provided in section 10 to keep track of recorded macro functions.

Keystroke count while in the menu system: While recording a macro, entering the menu system, changing multiple menu items, and exiting the menu system are only counted as one keystroke. Using the **Jog** to navigate the menu system does not count as keystrokes. Once the menu system has been exited, re-entering the menu system will count as a second keystroke.

Not all menu items can be programmed using macros. For a complete list of macro programmable menu items, see the table below.

During macro recording, the following button combinations perform special functions.

Button Sequence	Resulting Action
Function then **1.**	Activate Relay 1 output.
Function then **2.**	Reset Relay 1 output.
Function then **3.**	Pause macro for 1 second.
Function then **4.**	Pause macro for 5 seconds.
Function then **5.**	Activate Relay 2 output.
Function then **6.**	Reset Relay 2 output.
Function then **Enter.**	End macro recording

Macro Excluded Features

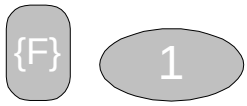
The following core features or settings cannot be programmed by Macro.

- Disk Maintenance.
- Erase Archive Medium.
- POTS Setting.
- Ethernet Setting.
- RS485 Network Address.
- Front Panel Lock/Unlock.
- Record Timer.

Running A Macro

A macro is a recorded sequence of up to 32 keystrokes. To activate a macro, press the **Function** button followed by the **Number** button of the desired macro. While running, the macro is indicated on-screen as the letter **F** and the macro number.

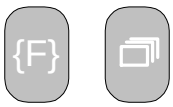
The user can cancel the macro at any time by pressing the **Function** button.



Function and Number Buttons

Daylight Savings Time (Alternate Method)

To adjust the time one hour for daylight savings time, press the **Function** button, then the **Sequence** button. If this function is activated during April, one hour is added to the time. If this function is activated in October, one hour is subtracted from the time. This function will only operate once per time period.



Function and Sequence Buttons

❑ Main Menu ® Macro ® Timed Macro Start

Use this menu to program scheduled start times for macros. Up to 20 scheduled start times can be programmed in this menu.

Event: Select the scheduled start event you wish to edit.

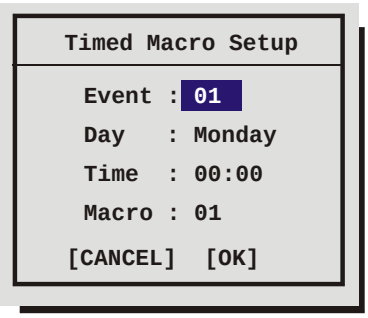
Day: Select the start day (**Monday – Sunday**) of the macro. Select ** (double asterisks) to run the macro every day.

Select **None** to cancel the scheduled start time.

Time: Select the start time for the macro.

Macro: Select the desired macro number.

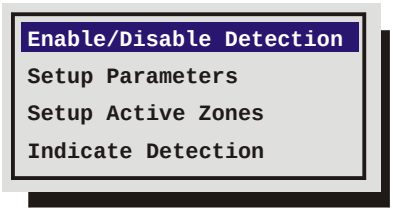
A form is provided in section to keep track of scheduled macros.



3.12 Motion Detection

Use this menu to:

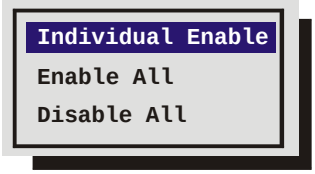
- Enable motion detection on a per camera basis.
- Activate individual zones in a scene to respond to motion detection.
- Activate the on-screen motion detection indicator.
- Set motion detection as Activity detection or Intrusion Detection.
- Configure the motion detection parameters on a per camera basis.



❑ Main Menu ® Motion Detection ® Enable/Disable Detection

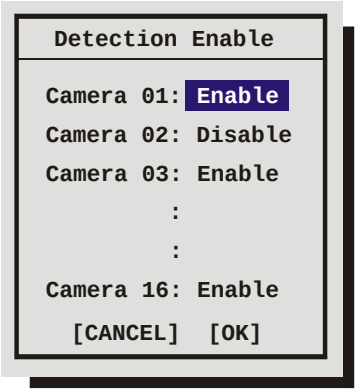
Selecting **Enable All** or **Disable All** from this menu will activate or deactivate motion detection on all cameras.

Selecting **Individual Enable** from this menu will bring up the following menu.



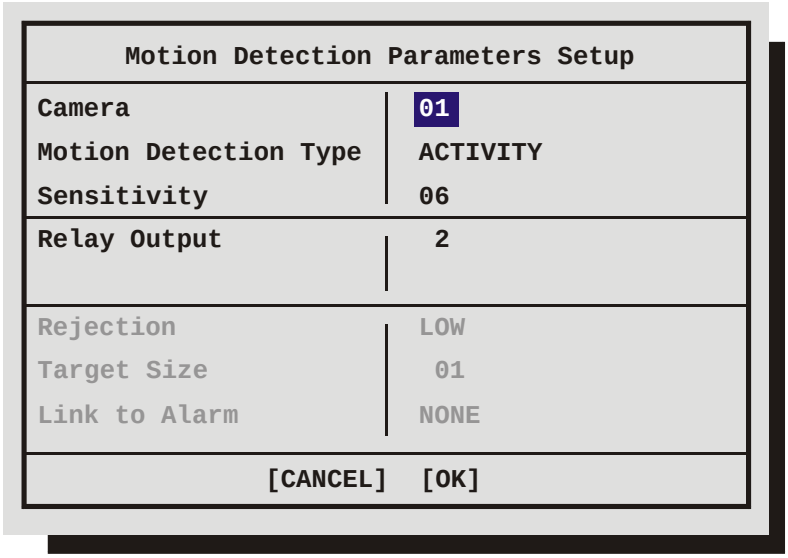
Individual Enable Menu

Use this menu to enable or disable motion detection on a per camera basis. Rotate the **Jog** to navigate, and the **Shuttle** to change the values.



❑ Main Menu ® Motion Detection ® Setup Parameters

Use this menu to select the **Camera**, **Motion Detection Type**, and **Sensitivity** of the Motion Detection you wish to configure.



Navigate in this menu using the **Jog** to select the field and the **Shuttle** to change the parameters.

Activity Vs. Intrusion

Activity Detection is a simple type of motion detection having only a sensitivity setting and a relay output. Intrusion Detection is a more sophisticated type of motion detection, with additional features such as false alarm rejection levels, minimum target size, and an alarm output.

Activity Detection Setup

If Activity is selected in Motion Detection Type field, the following parameters are enabled:

Relay Output: The unit may be configured to activate a relay output when motion detection is present. Select either **1**, **2**, **1+2** (both relays), or **None**.

Intrusion Detection Setup

If Intrusion is selected in Motion Detection Type field, the following parameters are enabled:

Sensitivity: Rotate the **Shuttle** to change the motion detection sensitivity, 10 being the most sensitive.

Rejection: Configure the unit's false alarm rejection feature by selecting **Low**, **Medium**, or **High**. These settings are based on the number of simultaneously triggered zones and the persistence of motion in a scene. The Low setting is the most sensitive to motion. The Medium setting will filter out most false alarm situations due to sudden luminance changes over the whole scene (clouds passing over). The High setting will filter out sudden luminance changes as well as spurious motion events that do not persist for a number of frames (a bird flying past the lens).

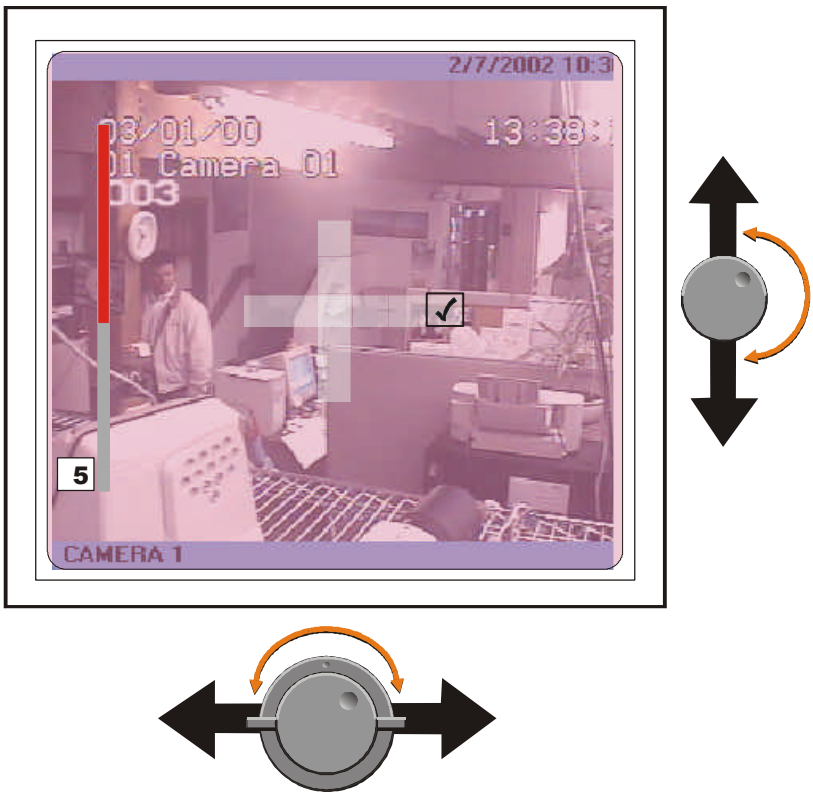
Target Size: This setting is the minimum number of zones (from the 16 x 16 grid) that must be activated simultaneously before it is considered to be valid motion.

Link To Alarm: Select the alarm number that you wish to activate when motion detection is activated.

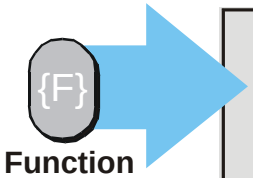
❑ Main Menu ® Motion Detection ® Setup Active Zones

Use this menu to setup the Active Zones for motion detection. The screen shown below will overlay the current video image allowing for precise activity zone setup. The disabled zones will be tinted. The enabled zones will be clear.

Activity Grid Setup Screen



Pressing the Function button will bring up the Help screen shown below. This screen will overlay the current video image.




```
'MENU' : Exit Activity Setup
'ENTER': Save and Exit Activity Setup
'PAUSE': Toggle between Enable and Neutral
'STOP' : Toggle between Disable and Neutral
'ZOOM' : Disable/Enable all zones
'PLAY FORWARD': Increase the Sensitivity level
"PLAY REVERSE': Decrease the Sensitivity level
```

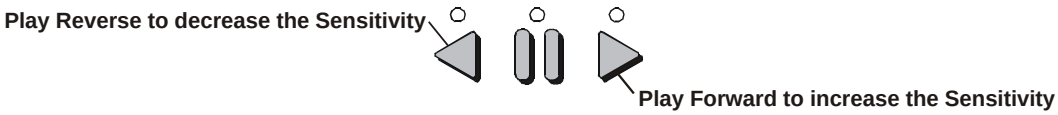
This Help Screen will display for 15 seconds, and then disappear. Press the Function button again to redisplay.

Sensitivity Scope

Use the sensitivity scope to adjust the motion detection sensitivity for the scene. The sensitivity scope is the bar located near the left-hand corner of the screen.

The black bar raises and lowers to indicate the degree of motion detected. When the black bar reaches the red bar, a motion detection alarm is activated.

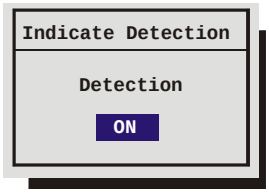
Adjusting Motion Detection Sensitivity: Raise and lower the red bar to change the motion detection sensitivity. Use the Play Forward button to increase the sensitivity level and the Play Reverse button to decrease the sensitivity level. The sensitivity level is also displayed as a numeric value.



❑ Main Menu ® Motion Detection → Indicate Detection

Motion Detection may be indicated on-screen by displaying the letter **M**.

Use this menu to turn this feature On or Off.



3.13 Camera Setup

Use this menu to:

- Edit the title for each camera.
- Adjust the Automatic Gain Control.
- Disable or Enable camera inputs.
- Specify cameras as covert (recorded but not displayed).
- View the Camera Scope (Histogram)

❑ Main Menu ® Camera Setup ® Camera Titles

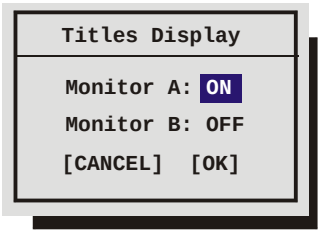
Use this menu to:

- Specify if the camera titles will be displayed on the monitors.
  Edit the title for each camera.

Titles Display

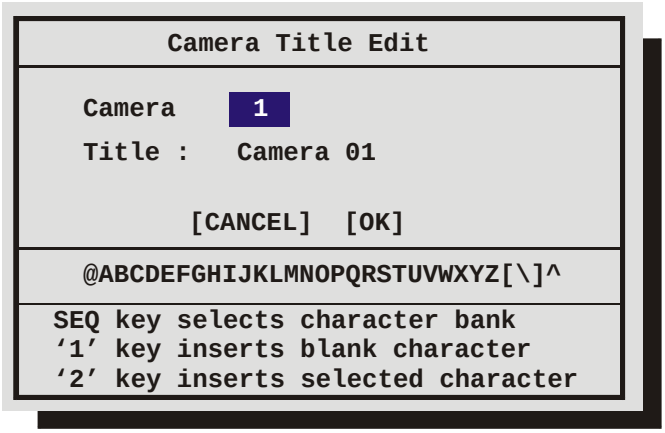
Camera titles may be displayed on either monitor. Use this menu to turn this feature On or Off.

Rotate the **Jog** buttons to navigate and the **Shuttle** to change the values.



Edit Titles

Rotate the **Shuttle** to select the camera whose title you wish to configure, and then press the **Enter** button. The Camera Title Edit menu will appear.

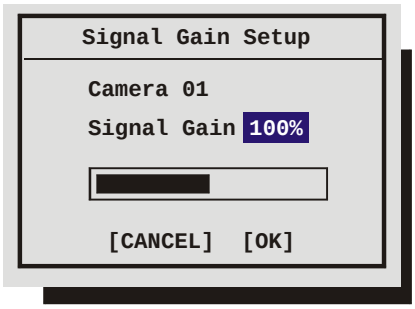


Camera Title Edit Menu

1. With the camera title selected, press the **Enter** button. The menu will enter the Edit mode and the character bank will appear in the center of the menu.
2. Press the **Sequence** button to select the desired character set.
3. Rotate the **Shuttle** to navigate the cursor in the camera title.
4. Rotate the **Jog** to navigate the cursor in the character bank.
5. Press the **Number 1** button to insert a blank character or press the **Number 2** button to insert the selected character.
6. When finished editing the title, press the **Enter** button to exit the edit mode.
7. **Save changes and exit the menu:** Select **[OK]**, then press the **Enter** button.
8. **Exit the menu without making changes:** Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

❑ Main Menu ® Camera Setup ® AGC

Use the Automatic Gain Control (AGC) to adjust the video input signal level for cameras whose level is outside the normal range. The default gain setting is 100%.

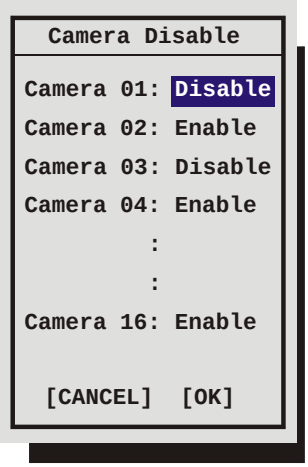


Rotate the **Jog** to navigate and the **Shuttle** to change the values.

Save changes and exit the menu: Select **[OK]**, then press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

❑ Main Menu ® Camera Setup ® Camera Disable



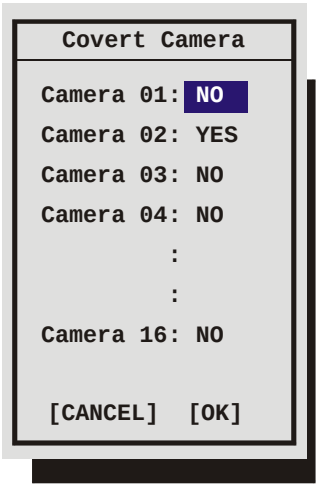
Use this menu to Disable or Enable each camera input individually.

Use the **Jog** to navigate and the **Shuttle** to change the values.

Save changes and exit the menu: Select **[OK]**, then press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button, or select **[CANCEL]**, then press the **Enter** button.

❑ Main Menu ® Camera Setup ® Covert Camera



This feature removes cameras from all live displays while continuing to record them, so that the users and the public are unaware that the camera is being recorded. Covert cameras are viewable during playback.

Select **Yes** in this menu to configure a camera as covert.

Rotate the **Jog** to navigate and **Shuttle** to change the values.

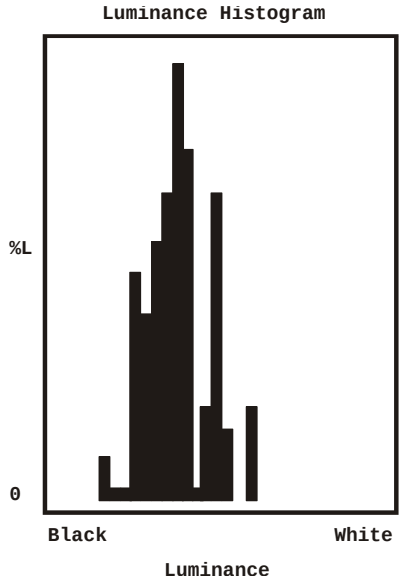
❑ Main Menu ® Camera Setup ® Camera Scope

Use this menu to view a live luminance histogram of the currently displayed camera.

Luminance Histogram

A Luminance Histogram is a graphical representation of how many times each gray-level value occurs in an image.

Use this feature to analyze and optimize the video input signal.



3.14 Audio Setup

Use this menu to enable or disable the audio feature of StoreSafe. This menu is not available on the standard models. Select from:

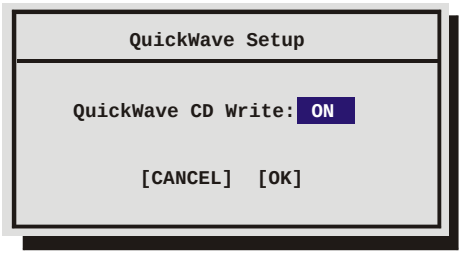
- OFF
- G.711

Audio Limitations:

1. To record audio at least one the unit's video inputs must be set to record video at a rate of 1pps or faster.
2. If all the cameras are set to EVENT mode and no events are occurring, no audio will be recorded regardless of the event recording speed.

3.15 Quick Wave Setup

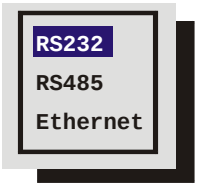
This feature provides the option of having the QuickWave software written to any CDs that are created. This allows the CD to be read on any PC without installing software. Select ON to enable, OFF to disable.



3.16 Communications

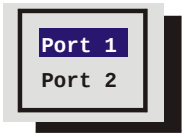
Use this menu to:

- Configure the baud rates and settings for the RS232 ports.
- Configure the network address for the RS485 network. This menu is not available on the standard models.
- Configure the Ethernet address and networks settings.



❑ Main Menu ® Communications ® RS232

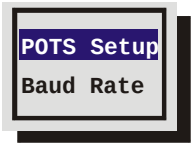
Select the Port you wish to configure and press the ENTER button. The Port 2 menu option is not available on the standard models.



Port 1

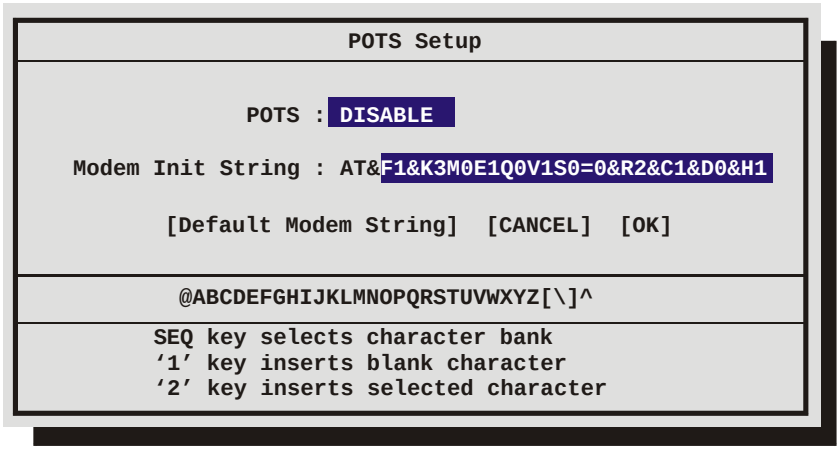
Use this menu to:

- Enable/Disable POTS and configure the Modem initialization string (POTS Setup).
- Adjust the Baud rate.



POTS Setup

The default modem string (shown below) is for use with Hayes Accura 56k, Diamond Supra Express 56k, and 5686 US Robotics modems in their default conditions. Consult with the modem manual before attempting to make any changes. It is strongly recommended that the modem initialization string only be modified by a qualified technician.



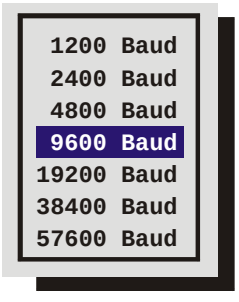
1. With the Modem Init String highlighted, press the **Enter** button to enter the Edit mode. The character bank will appear in the center of the menu.
2. Press the **Sequence** button to select the desired character bank.
3. Rotate the **Shuttle** to navigate the Modem Init String.
4. Rotate the **Jog** to select a character from the character bank.
5. Use the **Number 2** button or rotate the **Shuttle** to insert the desired character from the character bank into the Modem Init String and advance to the next character.
6. Use the **Number 1** button to insert a blank character.
7. When finished, press the **Enter** button.
8. To save the changes and reboot, select **OK,** then press the **Enter** button. The unit will only reboot if changes were made to the Modem Init String.
9. To exit the menu without making changes, select **Cancel**, then press the **Enter** button. Pressing the **Menu** button also exits the menu without making changes.

Baud Rate

Use this menu to configure the baud rate for Port 1 for external control of the unit via RS232. Rotate the Jog to select a baud rate from the menu.

Save changes and exit the menu: Press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button.



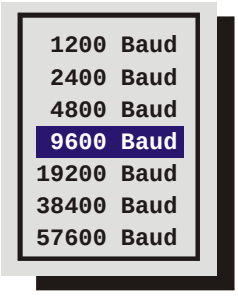
Port 2

Use this menu to configure the baud rate for Port 2. Rotate the Jog to select a baud rate from the menu.

Save changes and exit the menu: Press the **Enter** button.

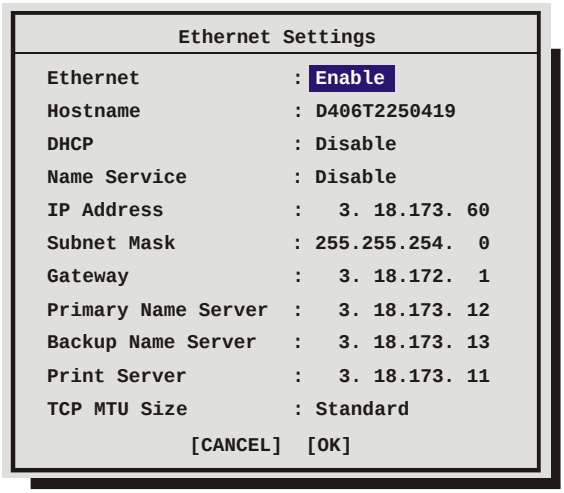
Exit the menu without making changes: Press the **Menu** button.

The RS232 port 2 is used for Event Generation and ASCII Text Insertion. See Section 7 for the RS232 Protocol required to perform these functions.



❑ Main Menu ® Communications ® Ethernet Settings

An ethernet connection can be used to connect to the unit from a PC for the viewing of live or recorded images. Use this menu to configure the Ethernet communications settings. Select from the following:



Ethernet: Select Enable or Disable.

Hostname: Not selectable. Pulled from the systems serial number.

DHCP: Select Enable or Disable. Enables dynamic IP addressing. When DHCP is enabled, the IP address, Subnet Mask, Gateway, and Server fields are dynamically addressed.

Name Service: Select from Disable or WINS. Enabling WINS registers the hostname and IP address within the current Network. This ensures that you can connect to the Triplex by hostname within the network.

IP Address / Subnet Mask / Gateway: Consult with a qualified Network Administrator or an MIS professional to configure these settings if DHCP is not enabled.

Primary Name Server / Backup Name Server: The IP addresses of the Primary and Backup Name Servers. Not required if DHCP is enabled.

Print Server: Enter the Print Servers IP address to enable the Print Image function (Function and Zoom).

TCP MTU Size: Select from Standard, 1400, and 1200. The MTU describes the maximum possible TCP packet size. Standard (1500) is optimal for most ethernet network environments.

3.17 Front Panel Lock

Use this feature to lock the front panel keypad. While locked, the only operational key on the front panel is the **Menu** button. To unlock the front panel, enter the Installer password and return to this menu.

Highlight the item you wish to select.

Save changes and exit the menu: Press the **Enter** button.

Exit the menu without making changes: Press the Menu button.

3.18 Factory Settings

Return To Factory Defaults

From the Factory Setting menu, press the **Enter** button. A password box will appear. Enter the Factory Default password. Select **OK**, then press the **Enter** button.

Factory Default Password	
16, 10-Channel	**8 1 1 1**
4-Channel	**4 1 1 1**

The unit will reboot, returning all settings (except the time and date) to the factory defaults. Due to the large size of the hard disk, the reboot may take several minutes.

Change Language

From the Factory Setting menu, press the **Enter** button. A password box will appear. Enter the Language password. Select **OK**, then press the **Enter** button.

A menu will appear displaying the available language selections. Rotate the **Jog** to select the desired language.

Language Password	
16, 10-Channel	**5 4 1 5**
4-Channel	**1 4 1 4**

Save changes and exit the menu: Press the **Enter** button.

Exit the menu without making changes: Press the **Menu** button.

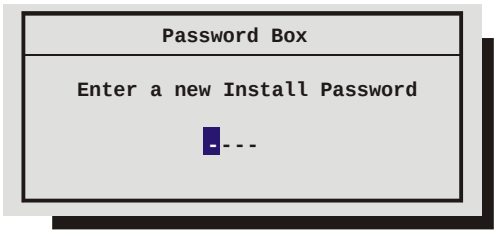
3.19 Passwords

Use this feature to change the Installer, Operator or Ethernet passwords.

Changing the Installer or Operator Passwords

To change the password:

1. Highlight the password you wish to change, then press the **Enter** button. A password box will appear.
2. Enter the new password using the **Number** buttons.
3. Highlight **OK**, then press the **Enter** button.
4. Re-enter the password.
5. Highlight **OK**, then press the **Enter** button. The user will be prompted, indicating if the password was entered correctly and changed.



The Ethernet Password

The Ethernet Password feature limits access to only those users who access the unit using the password feature of WaveReader versions 2.4 or later. When the unit is first setup, the default is **No Password Protection**. Meaning, anyone using WaveReader and accessing with an ethernet connection can connect to the unit.

Activate The Ethernet Password

1. Enter the new password using the **Number** buttons.
2. Highlight **OK**, then press the **Enter** button.
3. Re-enter the password.
4. Highlight **OK**, then press the **Enter** button. The user will be prompted, indicating if the password was entered correctly and changed.

Deactivate The Ethernet Password

To return the unit to **No Ethernet Password Protection**, enter the Ethernet Access Reset Password in the password box shown above.

Ethernet Access Reset Password
1 1 1 1

3.20 The Operator Menu

The Operator Menu Overview

The Operator menu is provided so that the user has access to a limited number of menu items. These menu items are primarily monitor display setup options, so that the user may "personalize" the monitor displays during their shifts. Other options include video archive setup and changing the operator password.

❑ Operator Menu ® About StoreSafe

About StorSafe menu: This menu provides information such as:

- Model Designation
- Serial Number
- Hostname
- Software Version
- Software Date
- Boot Code Version
- Hard Disk Size
- IP Address
- Hardware Address (MAC).
- DHCP Lease Expiration Date

Use the following table to find detailed information about configuring specific items from the Operator menu.

Operator Menu Item	Primary Menu Location	Section In Manual
Time/Date Display	Main Menu → Time/Date → Time/Date Display	3.8
Titles Display	Main Menu → Camera Setup → Camera Titles → Title Display	3.13
Alarm History	Main Menu → Alarm → Alarm History	3.11
Operator Password	Main Menu → Password → Operator Password	3.19

4 Alarms

4.1 Alarm Input

Alarm devices are connected via the Alarm PCB on the back panel of the unit (see section 1.7). Each Alarm Input corresponds with the Camera Input of the same number.

4.2 Alarm Output

Front Panel Alarm LED: The LED located to the left and above the Alarm button is lit for the duration of the alarm.

Internal Buzzer: The internal buzzer is activated until it is Silenced and Acknowledged. This feature can be turned off in the menu system (see Buzzer Setup in section 3.10).

Monitor Displays: Discussed below in the **On-screen Displays During Alarms** section.

Output Relays: The alarm output relay is active for the duration of the alarm.

Macro Activation: Unit can be configured in the menu system to activate a macro when an alarm is detected (see Link to Macro in section 3.10).

Record Rate: Record Rate can be increased by recording at the Alarm Record Rate (see section 3.10) and by Interleaved or Exclusive Recording (see Alarm Record mode in section 3.10).

4.3 Alarm Acknowledge

Pressing the **Alarm** button acknowledges to the unit that the alarm has been recognized and silences the internal buzzer. This does not clear the alarm condition.

Alarm Button

4.4 On-screen Displays During Alarms

Monitor-A and Monitor-B Display During Alarm

Single Alarm: Unit switches to a full screen display of the camera in alarm.

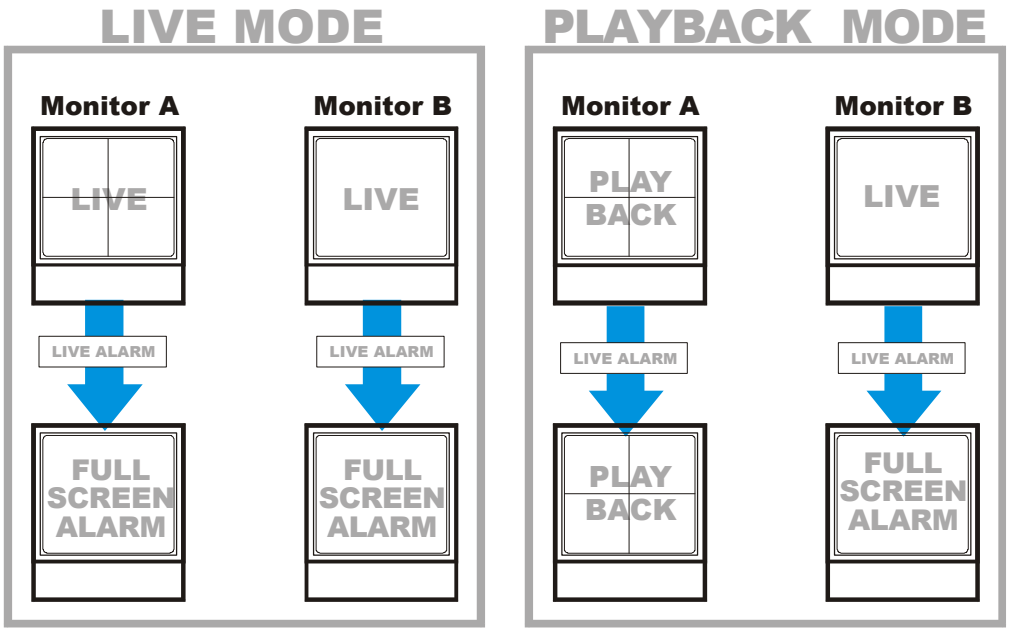
Additional Alarms: Unit switches to a sequenced display of all cameras in alarm.

4.5 Alarm Operations During Playback

Live Alarms Displays

Single Alarm: Unit switches to a full screen display of the camera in alarm on Monitor B.

Additional Alarms: Unit switches to a sequenced display of all cameras in alarm on Monitor B.



Recorded Alarms

Internal Buzzer: During playback, the internal buzzer is activated until it is silenced and acknowledged. This feature can be turned off in the menu system (see **Buzzer Setup,** in section 3.10).

Front Panel Alarm LED: The LED located to the left and above the **Alarm** button is lit for the duration of the alarm.

Monitor-A Multiscreen: Each camera in alarm is indicated on-screen by a flashing red "**A"** in its cameo. Alarm LED lights to indicate an alarm condition. There is no change in the playback (or Triplex) multiscreen based on playback of recorded alarms.

4.6 Alarm History Box

The Alarm History feature provides a list of the 100 most recent alarms. View the Alarm History Box by accessing the menu system, and selecting **Operator** ® **Alarm History**. The Alarm History Box can also be found under **Main Menu** ® **Alarm** ® **Alarm History**. For detailed information about viewing the Alarm History Box see Alarm History in section 3.10.

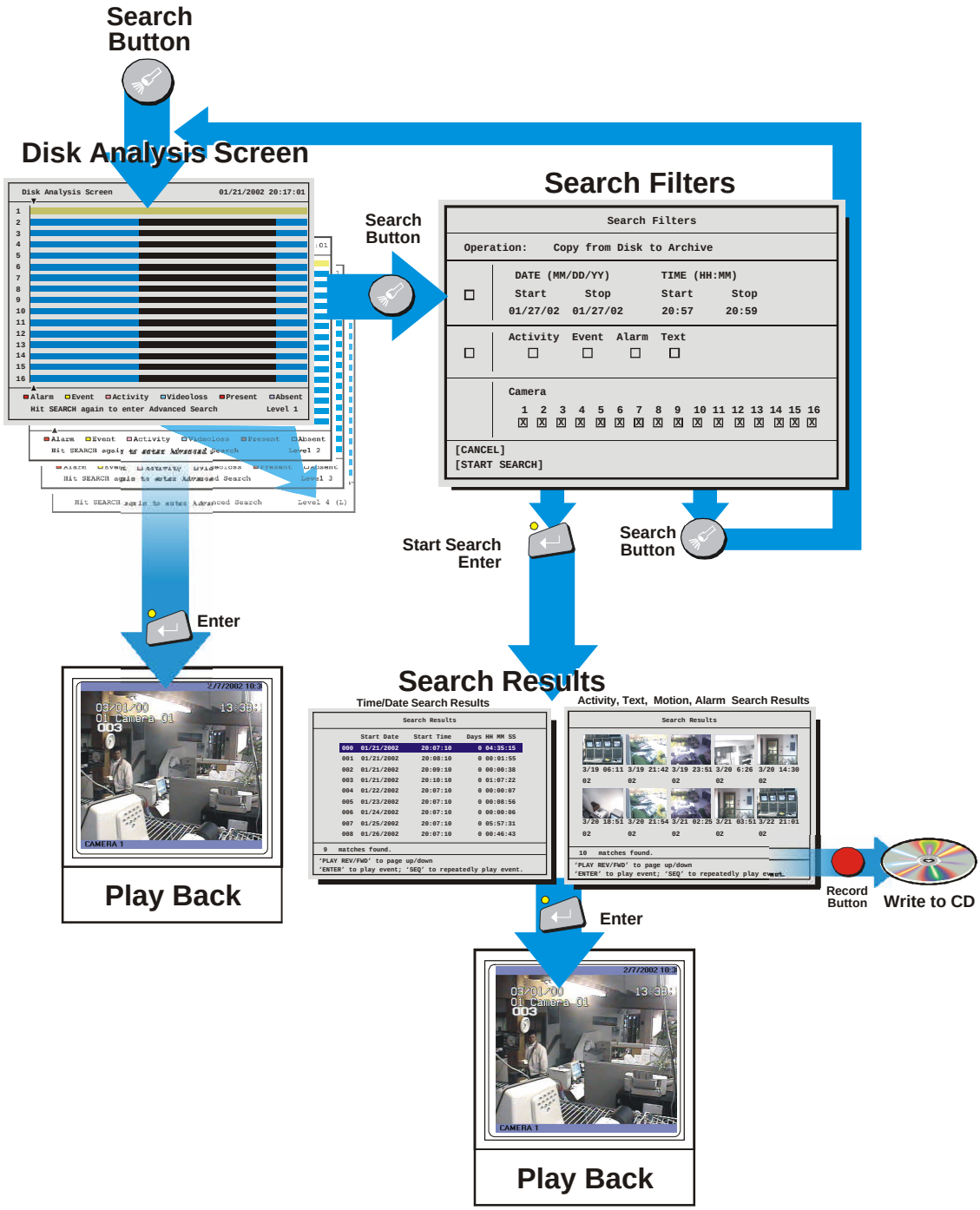
4.7 Searching For Recorded Alarms

See section 5.

5 Searching

StoreSafe provides a powerful search interface to access video files stored on the hard disk or an external archive device.

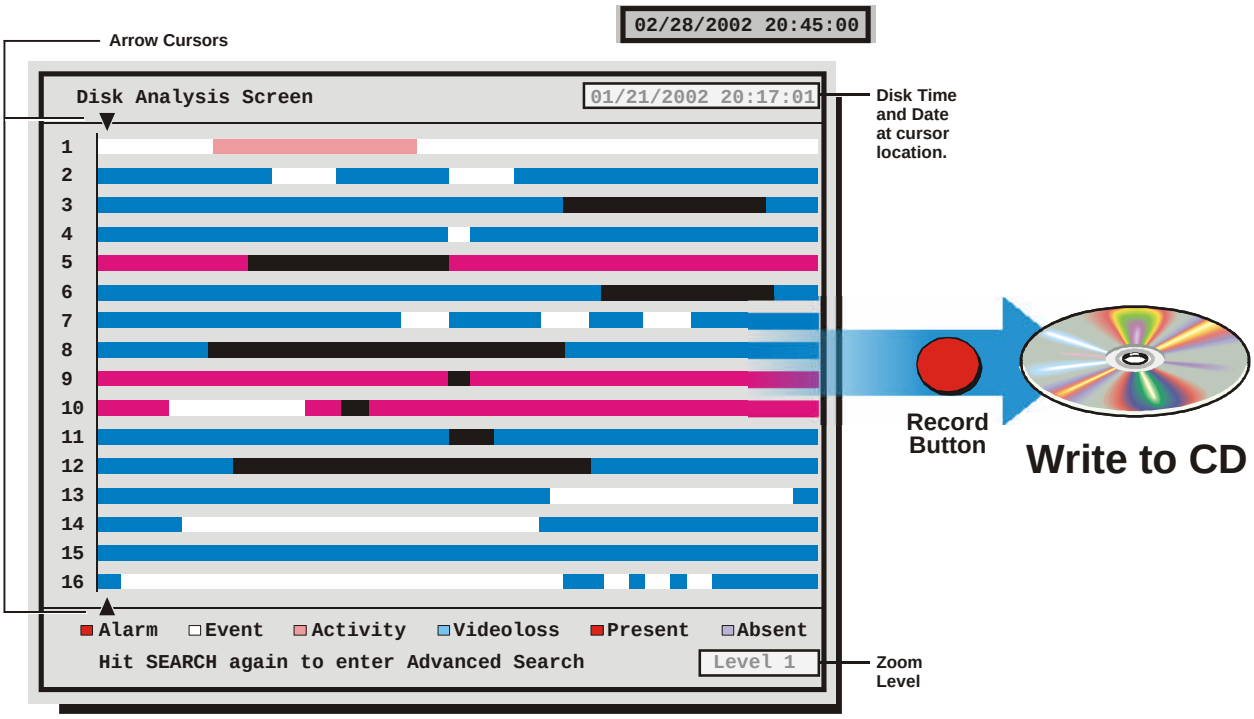
Search Menu Overview



5.1 Disk Analysis Screen

Begin by pressing the **Search** button. The Disk Analysis Screen will appear. This screen shows a graphical representation of the recorded video stored on the internal hard disk.

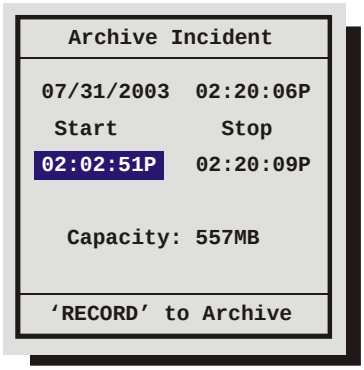
Search Button



Rotating the **Jog** moves the two arrow cursors across the representation of the recorded video. As the cursors move across the screen the corresponding disk time is indicated in the upper right of the screen. The video representations are color-coded by category. Rotating the **Shuttle** expands (Zooms) the display. The Lowest level (most detail) is indicated on screen with an **(L)**. Pressing the **Enter** button will start Playback from the cursor location.

5.2 Quick Archive to CD

Archive to CD on the Disk Analysis Screen by selecting the time and date and pressing the **record button**. The QuickWave Setup must be set to ON from the Main Menu → Quick Wave Setup menu (see section 3.15). The Archive Incident menu should appear.



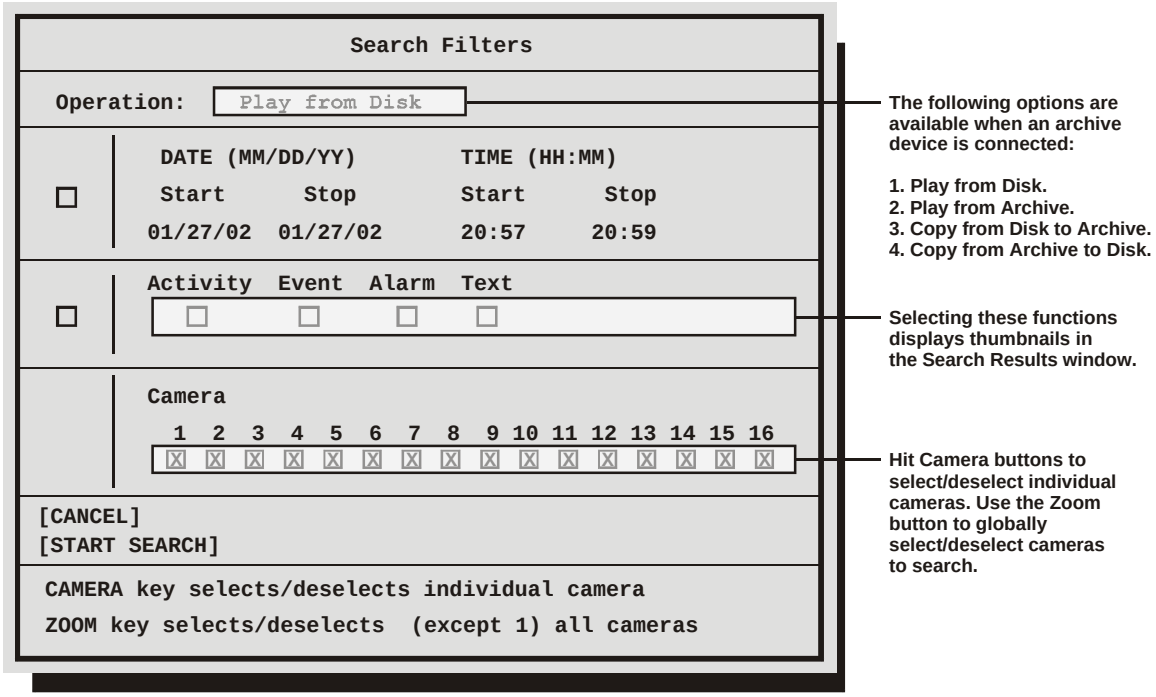
6. Use the **Jog** to modify the time parameters and use the **Shuttle** to move between the Start and Stop fields.
7. Press the **Record** button on the front panel when satisfied.
8. The CD Writer will open the CD tray when completed.

The video may now be viewed on any PC equipped with a CD-ROM.

5.3 Search Filters

Pressing the **Search** button a second time brings up the Search Filters Menu. Use the Search Filters menu to specify:

- The type of operation to be performed: **Play from Disk or Copy from Disk to Archive**.
- The Start and Stop date of the search.
- The Start and Stop time of the search.
- Searching for recorded activity, events, or alarms.
- Searching for a text string.
- Which cameras to search inclusively or exclusively.



Selecting Search Parameters

1. Rotating the Jog to navigate, highlight the **box** adjacent to the parameters that you wish to modify.
2. Once in the Parameter Box, use the **Shuttle** to navigate through the fields and the Jog to change the values.
3. To activate the parameter, use the **Shuttle** or the **Enter button** to place an **[X]** in the check box.
4. When finished, use the **Jog** to navigate to another parameter.

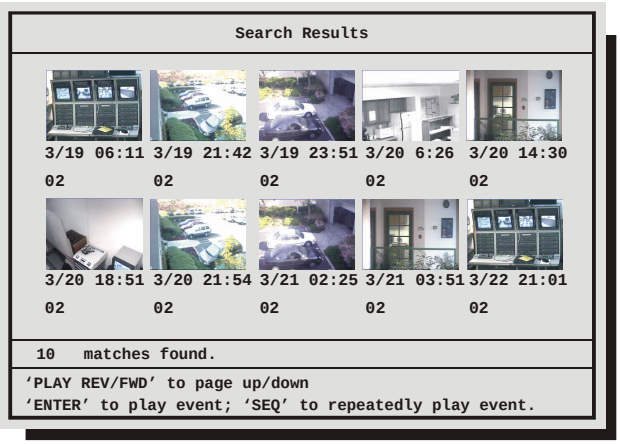
5.4 Search Results

Activate Search

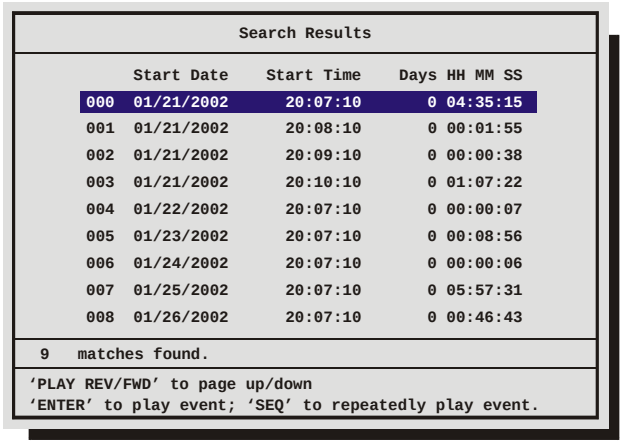
From the Search Filters menu, use the **Jog** to navigate to the **Start Search** parameter. With the **Start Search** parameter highlighted, press the **Enter** button to begin the search operation. When finished searching, the Search Results window will appear. A maximum of 200 results can be displayed per

search. Two types of Search Result windows will appear depending on the type of search that is performed.

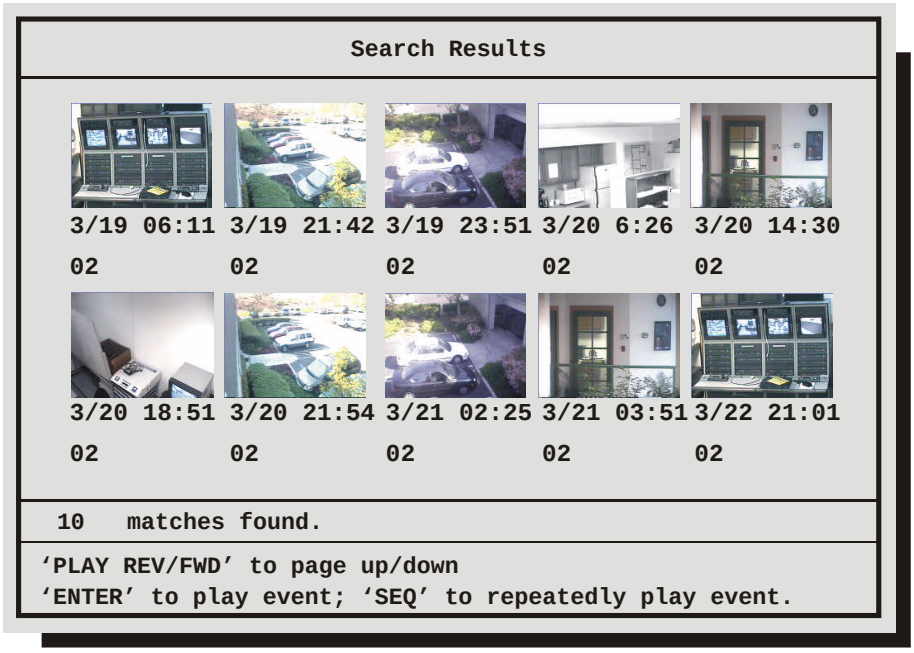
Activity, Text, Motion, Alarm Search Results



Time/Date Search Results



Follow the directions on-screen to select, archive, playback, etc.



Some options may be unavailable depending on the type of search performed. These options are not displayed. When archiving, the unit will not allow the amount of selected data to exceed the amount of space available on the target medium.

Press the **Menu** button to exit the Search Results window without making a selection.

Hitting the **Enter** button will play the selected search result.

Hitting the **Enter** button again while in playback will cause the next selection from the search list to be played.

Press the **Sequence** button to repeatedly play the selected event.

Press the **Record** button on the front panel to write the selected data to CD.

6 WebBrowser

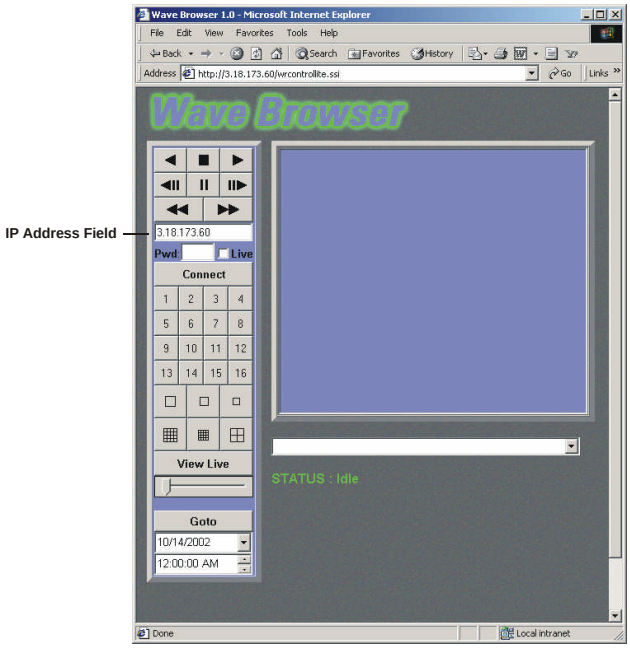
StoreSafe features an integrated WebBrowser interface. The WaveBrowser option allows the user to view video from any ethernet connected units with software version 4.09 or above.

For WaveBrowser to function properly, certain ActiveX controls must be set correctly. To setup the ActiveX controls:

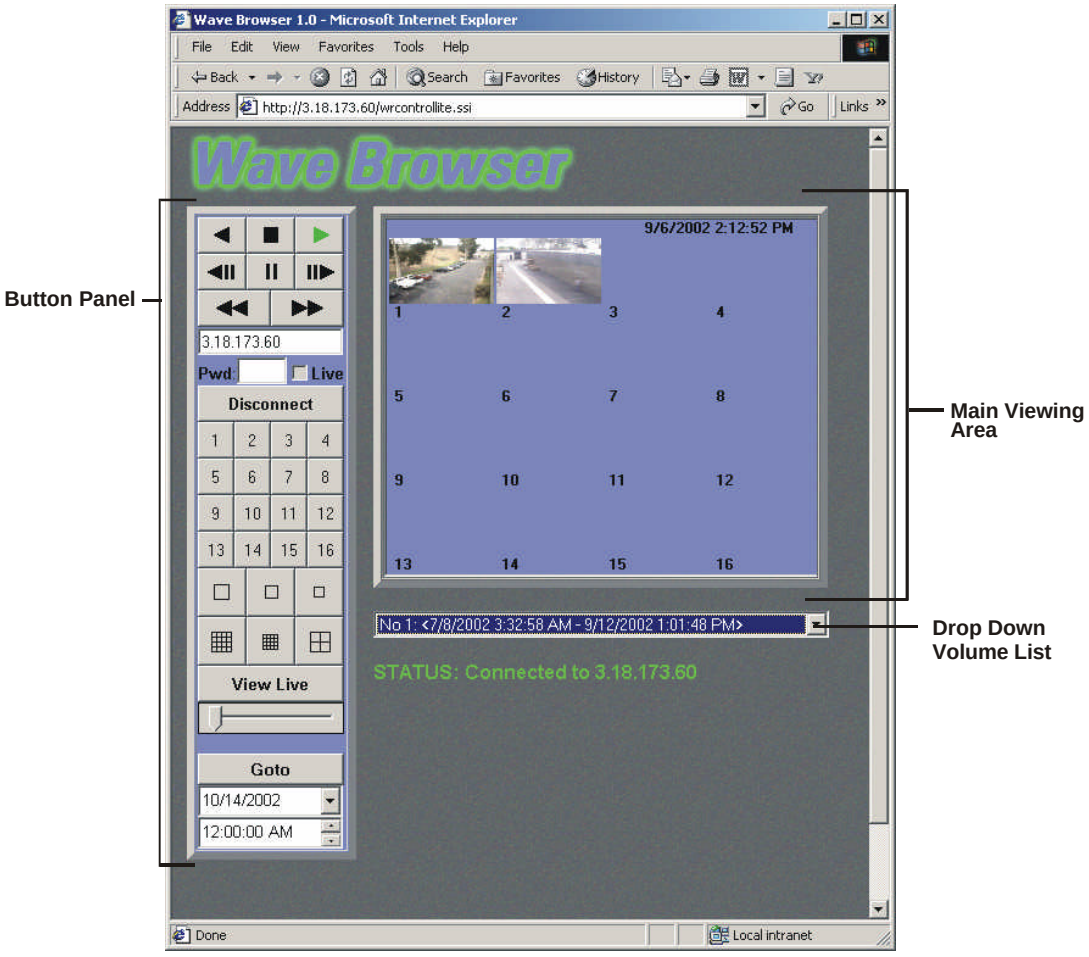
1. Click on the Tools → Internet Options Menu in Internet Explorer.
2. Click on the Security tab.
3. Select Local Intranet for the Web Content Zone.
4. Click on the Custom Level button.
5. Ensure that both Download unsigned ActiveX controls and Initalize and Script ActiveX controls not marked as Safe are set to Prompt.
6. Click the OK button.
7. Click on the Yes button in the Warning message.
8. Click the OK button in the Internet Options window.

To access the web interface:

1. Launch Internet Explorer (version 5.5 or later) on any local Internet connected PC or laptop.
2. Type in the unit's IP address or hostname in the address field and press enter. The Enter Network Password box should appear.
3. Enter the correct Username and Password in their respective fields (the default username and password is admin). Click the OK button.
4. The WaveBrowser window should appear. Type the IP address in the IP Address Field and click the Connect button.



6.1 WaveBrowser Overview and Controls



The Main program window consists of the following areas:

- **The Main Viewing Area:** The large blue area.
- **The Button Panel:** The left side of the window.
- **The Drop Down Volume List:** Allows the selection of available Disk volumes.

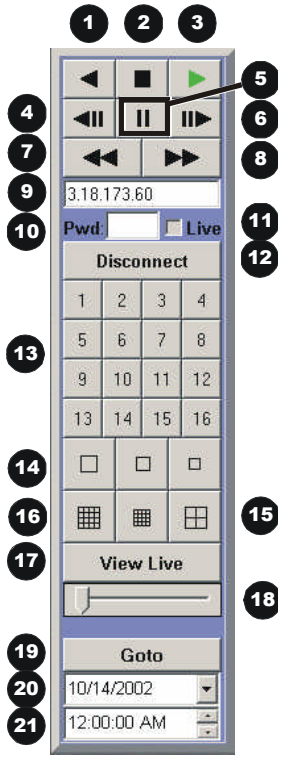
The Main Viewing Area

Pictures are displayed in this area in Multi-Camera, and Single-Camera formats. Picture display order is according to the information encoded by the unit used to create the original video data file.

Choose from the following displays:

- 4-way Display
- Single Camera Display Large
- Single Camera Display Medium
- Single Camera Display Small

The Button Panel



1. **Play Backward button:** Click on this button to playback video in reverse.
2. **Stop button:** Click on this button to halt all playback operations. The Play Pointer Slider Bar moves to the start of data.
3. **Play Forward button:** Click on this button to playback video.
4. **Single Frame Rewind button:** Click on this button to rewind the video a single frame.
5. **Pause button:** Pauses playback until the Pause button is pressed again. Clicking any of the buttons, except Stop will also resume playback. The Play Pointer slider bar stays at the current position while paused.
6. **Single Frame Advance button:** Click on this button to advance the video a single frame.
7. **Rewind button:** Click on this button to perform high-speed reverse playback.
8. **Fast Forward button:** Click on this button to perform high-speed playback.
9. **IP Address Field:** Enter the unit's IP address.
10. **Password Field:** Enter the unit's password, if necessary.
11. **Live check box:** Click in this box to enable live viewing before connecting.
12. **Connect/Disconnect button:** Click on this button(s) to connect to the unit.
13. **Number buttons:** Press any of these buttons (up to number 10 on 10 channel units) to call up individual cameras for display.
14. **Single Camera Display Size:** Choose from Small, Medium, or Large.
15. **16-way Multiscreen buttons:** Not available on StoreSafe models.
16. **4-way Multiscreen button:** Selects a Large 4-way display.
17. **View Live Button:** Click on this button while connected to view live video.
18. **Play Pointer Slider Bar:** The Play Pointer slider bar advances to the right to indicate the playback position on the disk. The user can drag the bar to navigate forward or backward.
19. **Goto Button:** Click on this button to go to the selected date for the drop down time and date boxes.
20. **Drop down Date Selection Menu:** Click on this field to display a graphic calendar to select a date to view.
21. **Time Selection Menu:** Click on the Up or Down Arrows to select a specific time to view.

The Drop Down Volume List Box

Click on the arrow to display a list of available disk volumes on the connected unit. Click on the volume to select.

6.2 StoreSafe WaveLink

A new feature with StoreSafe software version 5.00 is the StoreSafe WaveLink. This feature allows putting command codes in the URL when calling WaveBrowser to control actions the WaveBrowser is going to perform.

This feature can be used by Web Developers to link various cameras to specific Web content. It will also be used by StoreSafe's Email feature to allow the recipient of an alarm email to click on a link in the email, which causes the WaveBrowser to connect and play back at the time when the alarm occurred.

Functionality

The traditional WaveBrowser URL is **http://<IP_Address>/wrcontrollite.ssi**. This URL will start the WaveBrowser in the disconnected state. StoreSafe software version 5.00 supports command codes placed after an underscore after **wrcontrollite** and before **.ssi**. In the following example, the options are in bold.

Example: http://3.18.172.230/wrcontrollite_**c=1s=2a=3t=1361959858**.ssi.

The following table specifies the supported options:

Name	Code	Description	Example
Camera	c=<n>	Describes either the camera number for fullscreen (1=Camera 1, …16=Camera 16) or the type of the multiscreen display (100 = Multiscreen 16 large, 101= Multiscreen 16 small, 102= Quad screen)	c=10
Size	s=<n>	For fullscreen camera, describes the size of the display (1=large, 2 =medium, 3= small)	s=2
Action	a=<n>	Describes the action the WaveBrowser has to take: 0 No action 1 Normal Connection Play 2 Normal Connection Live 3 Normal Connection Goto 4 Live Connection	a=2
Time	t=<n>	When action is set to 3 (Goto), the time specifies where to go in number of seconds since 01/01/1960.	t=1361959858

Please Note: When an option is not specified, it will be set to 0.

When a normal connection is requested, but the StoreSafe unit is already connected via a normal connection, the WaveBrowser should open a live connection instead.

The default page, http://3.18.172.230, does not accept option codes and will open the WaveBrowser in disconnected state. The example URL from above (http://3.18.172.230/wrcontrollite_**c=1s=2a=3t=1361959858**.ssi) requests the WaveBrowser to make a **normal connection**, **play back at 2/27/2003 10:53:32** displaying **camera 1** in **medium size**.

Email Links

StoreSafe is able to send emails when certain events occur (like videoloss, alarms, etc.). When in record mode, StoreSafe software version 5.00 will add a WaveBrowser link in the email notification.

Clicking this link initiates WaveBrowser to be started, make a normal connection and play back the specific camera with a medium size video window at the time the event occurred.

7 Technical Specifications

General	
External Power Supply	12 Volt DC. 60 Watt (5 Amp)
Connector	2.1mm barrel connector, center positive.
Power Consumption	35 Watt nominal (single disk).
Operating Temperature Range	Operating: 0 to 40°C. Storage: -20 to +60°C.
Relative Humidity Range (Non-Condensing)	Operating: 10% to 80%. Storage: 10% to 95%
Dimensions	Inches: 13 x 14 x 3.5 MM: 330 x 355 x 89
Weight	10 lbs. (4.5 kg)

Connections	
10/100 Ethernet Port	RJ-45 Connector.
RS232 Port 1	DB-9 Male Connector.
RS232 Port 2	RJ-45 Connector.
Camera Inputs	BNC connectors. Auto Terminating. Color & Mono.
Monitor-A Output (Composite)	BNC Connector
Monitor-B Output (Composite)	BNC Connector
RS485 Port	Two Looping RJ-45 Connectors
Alarm I/O Port	Use Supplied DB-25 PCB connector.

Video	
Video Signal Input	0.5 to 2.0 Volts peak-to-peak with Automatic Gain Control.
Video Signal Output	1 Volt peak-to-peak into 75-Ohm.
Input Termination	75-Ohm (Auto Terminating)
Display Memory	4 Megabytes
Resolution	Horizontal: 720 Pixels. Vertical: 484 Lines (576 for PAL).
Gray Scale	256 levels
Colors	Y:U:V 4:2:2, 16.8 Million Colors
Compression Standard	Wavelets

Alarms	
Inputs	1 per camera.
Relay Configuration	Normally Open.
Record Priority	Interleaved, Exclusive, or No Change.
Alarm Status Indicators	Relay Outputs, On-screen Indicators. Status Retrievable via RS232 port.

Motion Detection	
Zones Per Camera	256: 16 x 16 grid.
Sensitivity Settings	10 levels
Gray Levels Per Zone	256 levels
Motion Detection Status Output	Relay Outputs, Link to Alarms, Link to Events, On-screen Indicators. Status retrievable via RS232 port.

Part Numbers	
Remote Keyboard	CBR-KB3, CBR-KB3/J, KTD405. Includes motorized pan, tilt, and zoom controls.
HP Printer	HP DeskJet 3820
Hawking Print Server	PN7127P (1-Port Mini-Internet Print Server)
Replacement Manual	0150-0229

8 RS232 Event Generation/Text Insertion Protocol

8.1 Message Structure

The **Delimiter** byte signals the start of a new message, and has a value of 0xFF.

The **Class** and **Command** fields identify the type of message.

The **Data Length** is a 16-bit value indicating the number of bytes in the **Data** portion of the message. Data Length is sent using Intel byte ordering (Little Endian).

The **Check Sum** byte is the result of XORing all the bytes in the message.

Delimiter
Class
Command
Data Length
Data
Check Sum

8.2 Message Type

One message is currently supported to store text along with recorded video.

CMD_NEW_ADD_TEXT

Class byte is 0x14.

Command byte is 0x40.

Data Length is the number of data bytes in the message (from 2 to 502).

Camera byte indicates the camera associated with the text. The valid range is from 0 to 15.

Alarm/Event byte usage is described in the following section.

String field contains text characters. The string can be from 0 to 500 characters in length.

0xFF
0x14
0x40
Data Length[0]
Data Length[1]
Camera
Event
String[0]
String[1]
:
String[n-1]
Check Sum

8.3 Alarm/Event Field

The two least significant bits are currently used for the event. Bits 2 and 3 are used for Alarm

MSB 7							LSB 0
0	0	0	0	**A**	**A**	**E**	**E**

A – Alarm/Event 0x00

If both the start and end bits are clear, the associated text will be stored with the next recorded field for that camera. That cameras record rate will not be changed.

B – Alarm/Event 0x01

If only the start bit is set, the associated text will be stored with the next recorded field for that camera. This will cause the selected camera, as well as any pre-event fields to be recorded at the Alarm or Event Record Rate.

C – Alarm/Event 0x02

If only the end bit is set, the associated text will be stored with the next recorded field for that camera. This will start the post-event timer** after which, the selected camera will resume recording at the normal record rate*.

D – Alarm/Event 0x03

If both the start and end bits are set, the associated text will be stored with the next recorded field for that camera. The post-event timer will be started** after which the selected camera will resume recording at the normal record rate*.

*If no alarms are present.

**If enabled.

9 RS232 Remote Control Protocol

The unit supports two different communication types:

- Remote Front Panel Button Emulation
- Remote Configuration and Status

9.1 Front Panel Button Emulation

Data Structure

Byte 1: 0xFF
Byte 2: 0x55
Byte 3: Front Panel Button Code

Description

Byte 1 and 2 are header bytes.

Byte 3 contains the code for a specific front panel button.

The different buttons and their corresponding codes are as follows.

No Button Pressed	0
Record	1
Play	2
Stop	3
Alarm	4
Freeze	5
Zoom	6
Sequence	7
Reserved	8
Camera 1	9
Camera 2	10
Camera 3	11
Camera 4	12
Camera 5	13
Camera 6	14
Camera 7	15
Camera 8	16
Camera 9	17
Camera 10	18
Camera 11	19
Camera 12	20
Camera 13	21
Camera 14	22
Camera 15	23
Camera 16	24
Reserved	25 - 40
Menu	41
Enter	42
Reserved	43
Macro	44
Reserved	45-49
Monitor B	50
Reserved	51-63
Left Arrow	64
Right Arrow	65
Up Arrow	66
Down Arrow	67
Reserved	68-74
Alarm and Sequence	75
*Alarm and Camera 1	76
*Alarm and Camera 2	77
*Alarm and Camera 3	78
*Alarm and Camera 4	79
*Alarm and Camera 5	80
*Alarm and Camera 6	81
*Alarm and Camera 7	82
*Alarm and Camera 8	83
*Alarm and Camera 9	84
*Alarm and Camera 10	85
*Alarm and Camera 11	86
*Alarm and Camera 12	87
*Alarm and Camera 13	88
*Alarm and Camera 14	89
*Alarm and Camera 15	90
*Alarm and Camera 16	91
Reserved	92-110
Search	111
Frame Reverse	112
Frame Forward	113
Play Reverse	114
Stop	115
Play Forward	116
Monitor A	130
2 Way Multiscreen	131
4 Way Multiscreen	132
6 Way Multiscreen	133
7 Way Multiscreen	134
9 Way Multiscreen	135
10 Way Multiscreen	136
13 Way Multiscreen	137
16 Way Multiscreen	138
Print Key	139
Archive Key	140

*Must send a “No Button Pressed” command immediately following any of these commands.

9.2 Configuration and Status

i) Data structure

Byte 1: 0xFF
Byte 2: Command Type
0xAA: (SET) Update DVMRe with data.
0xBB: (GET) Extract data from DVMRe.
Byte 3: Data Length (n)
Byte 4: Data Type
0x61: Restart DVMRe
0xFE: Send configuration data to DVMRe
0x09: Read Alarm History from DVMRe
0xFF: Read configuration and status data from DVMRe
Byte 5: Data byte 1
Byte 6: Data byte 2
:
:
Byte x: Data byte n

ii) Sending data to the DVMRe

a) Restart StoreSafe
This command will restart StoreSafe.

Byte 1: 0xFF
Byte 2: 0xAA
Byte 3: 0
Byte 4: 0x61

b) Send data to StoreSafe
Configuration data can be sent to StoreSafe, to change the way it operates. The data is arranged in the form of 16 byte blocks, numbered from 1 to 213. Blocks 182, 183 and 185 are status blocks, and hence cannot be written to. For details about the contents of each block, contact GE-Interlogix and request the **Block Data Structure** for StoreSafe.

Byte 1: 0xFF
Byte 2: 0xAA
Byte 3: 17
Byte 4: 0xFE
Byte 5: Block Number
(1-181, 184, 186-200)
Byte 6: data[0]
: :
: :
Byte 21:data[15]

After sending a block or series of blocks, block number 255 must be updated to signal the end of the configuration session. All data bytes for block 255 must be set to 0.

iii) Requesting data from the DVMRe

When a message of type 0xBB is sent to StoreSafe, it will respond by sending 16 bytes of requested data.

a) Read Alarm History List

Byte 1: 0xFF
Byte 2: 0xBB
Byte 3: 0
Byte 4: 0x09

When the "Read Alarm History List" message is received by StoreSafe, it responds by sending a start byte 0xFF, followed by ASCII strings for every alarm event in its alarm history list, and a stop byte, 0xFF. Each string is formatted as follows:

dd.bmm/ddbhh:mm:ssbaa<CR><LF>

dd:	index number (00 - 99)
b:	space character
mm:	month (01-12)
dd:	day (01-31)
hh:	hours (00-23)
mm:	minutes (00-59)
ss:	seconds (00-59)
aa:	alarm number (01-16)
<CR>	Carriage return (0x0D)
<LF>	Line feed (0x0A)

Example: 03. 11/27 22:48:58 15

b) Read data from StoreSafe
Configuration and status data can be read from StoreSafe. The data is arranged in the form of 16 byte blocks, numbered from 1 to 213. For details about the contents of each block, contact GE-Interlogix and request the **Block Data Structure** for StoreSafe.

Byte 1: 0xFF
Byte 2: 0xBB
Byte 3: 1
Byte 4: 0xFF
Byte 5: Block Number 1-213 or 255 if all blocks are requested.

StoreSafe responds to the “Read data” request by sending all the requested data bytes consecutively, without any start or stop bytes.

A total of either 16 bytes or 3408 bytes will be transmitted, depending on whether a single block or all the blocks were requested.

10 Macro Tables

Photo copy this page and use it to keep a record of the programmed macro functions.

10.1 Macro Functions Table

Macro Number	Description
1	
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
Function + Sequence	Daylight Savings Time: Sets clock ahead one hour in April, and back one hour in October.

10.2 Scheduled Macro Table

Event	Day	Time	Macro to Run
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

11 Warranty and Service

11.1 Factory Service

Warning: Do not open the top cover or attempt to service the unit, as this may expose you to dangerous voltages and other hazards. Programmer maintenance of this unit is limited to external cleaning and inspection. Refer all servicing to qualified personnel.

If the unit requires factory service, contact the dealer who supplied the unit to you for the correct procedures on returning the unit to the factory or the nearest factory service center.

If the dealer is not available, contact the manufacturer of the unit as detailed below and request a Return Material Authorization number (RMA). The unit's serial number must be provided before a RMA number can be issued. Units returned to the factory for service must have freight and insurance prepaid, and must show the RMA number clearly on all shipping documents. The failure symptoms must be clearly described by the operator and enclosed with the unit together with a copy of the original suppliers invoice. Failure to comply with these instructions will delay service of the unit, and may result in the unit not being accepted by the Repair Center.

Factory Address

GE-Interlogix, Kalatel Division
Attention: Repair Center
3197-C Airport Loop Drive
Costa Mesa, CA. 92626
United States of America
Telephone: 800-343-3358 (7:00 AM to 4:30 PM, Pacific Time)
In Oregon: 541-754-9133
Fax: 541-754-7162 (24 hours a day)

For warranty information, see the following page.

11.2 Warranty and Return Information

GE-Interlogix warrants all of its equipment for three years from the date of purchase. This warranty covers any defects in materials and workmanship. Equipment failures that are due to improper installation, modification, abuse, or acts of nature will not be covered by this warranty. The repair department will evaluate all equipment returned for repair to determine warranty coverage. The Tech Support Manager will resolve any questions that may arise during evaluation to make a final determination.

Note: The three-year warranty does not apply to the following products:
MobileView® and the monitor CRT, which carry a 12-month warranty from the date of purchase.

The warranty specifically covers any defects in material and workmanship and does not cover equipment that has been abused, damaged, or modified.

For all warranty repairs, GE-Interlogix will cover all costs, including parts, labor, and shipping. Repaired equipment will be returned via the same method of shipment in which it was received. If a customer requests a faster return shipment, the difference will be charged.

For all non-warranty repairs, the customer will be billed for parts, labor, and shipping. Labor will be billed in half-hour increments.

Note: Customers requesting an estimate prior to repair will be notified by phone. If they cannot be reached, they will be notified by fax. If we are unable to reach the contact person for repair authorization after one phone attempt and two fax attempts, the equipment will be returned without being repaired. We will hold equipment no longer than two weeks.

Advance Replacement Policy

When an advance replacement is required, we will send the customer replacement equipment from our stock and receive the returned product in exchange. The received equipment will be evaluated and the repair department will determine whether it is a warranty replacement. If it is non-warranty, see our repair policy above for details. The following guidelines will be used for all advance replacements:

- Fewer than 45 days from purchase, GE-Interlogix will replace the product with new equipment.
- From 45 days to 1 year from purchase, GE-Interlogix will replace the product with refurbished equipment.
- From 1 year to 3 years from purchase, the product must be sent in for repair. Advance replacements will be sent for a fee of $100.

If you have questions about this policy, please contact GE-Interlogix Kalatel Division's RMA Department at 800-469-1676.